

FIG. 1

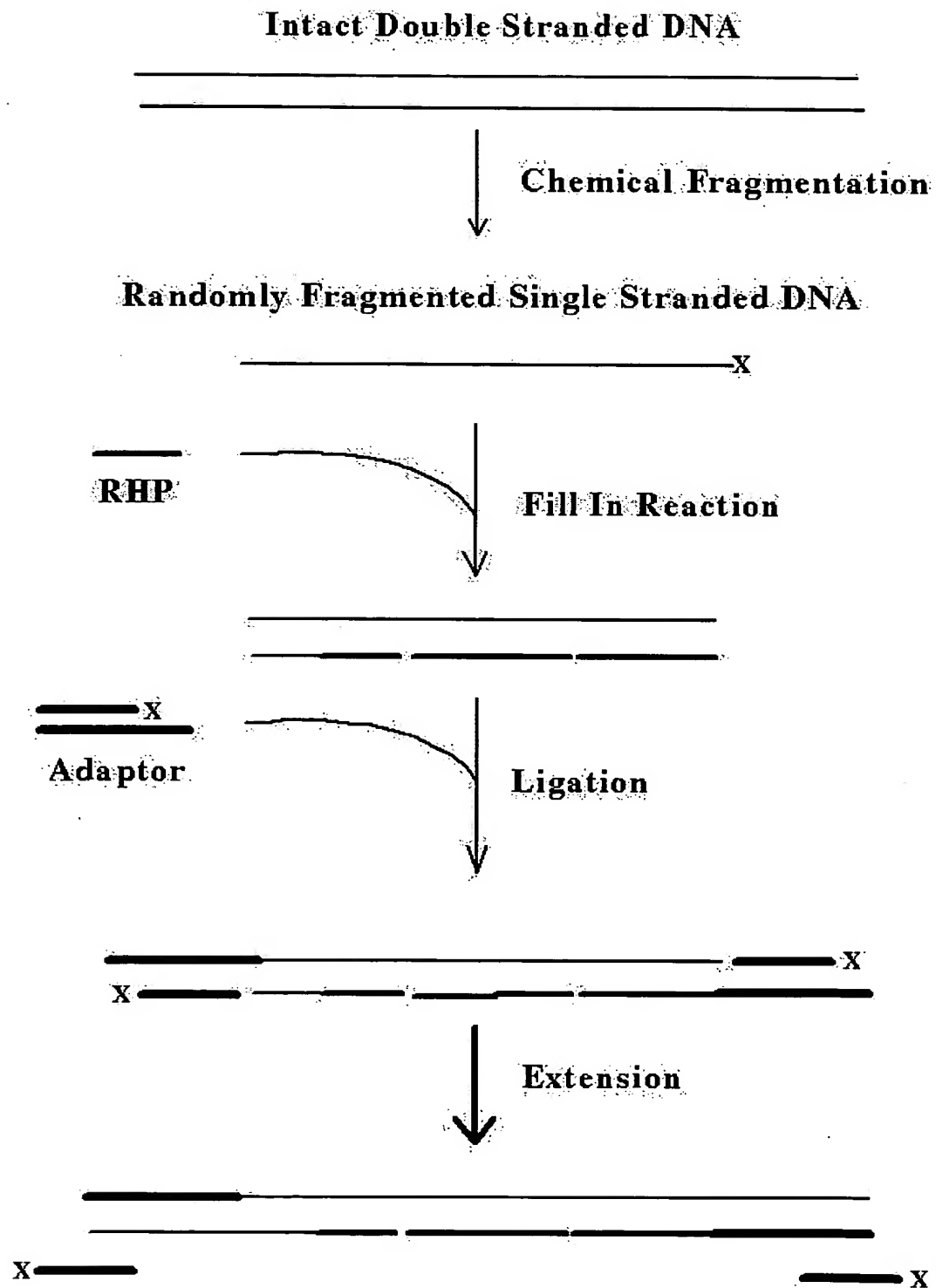


FIG. 2

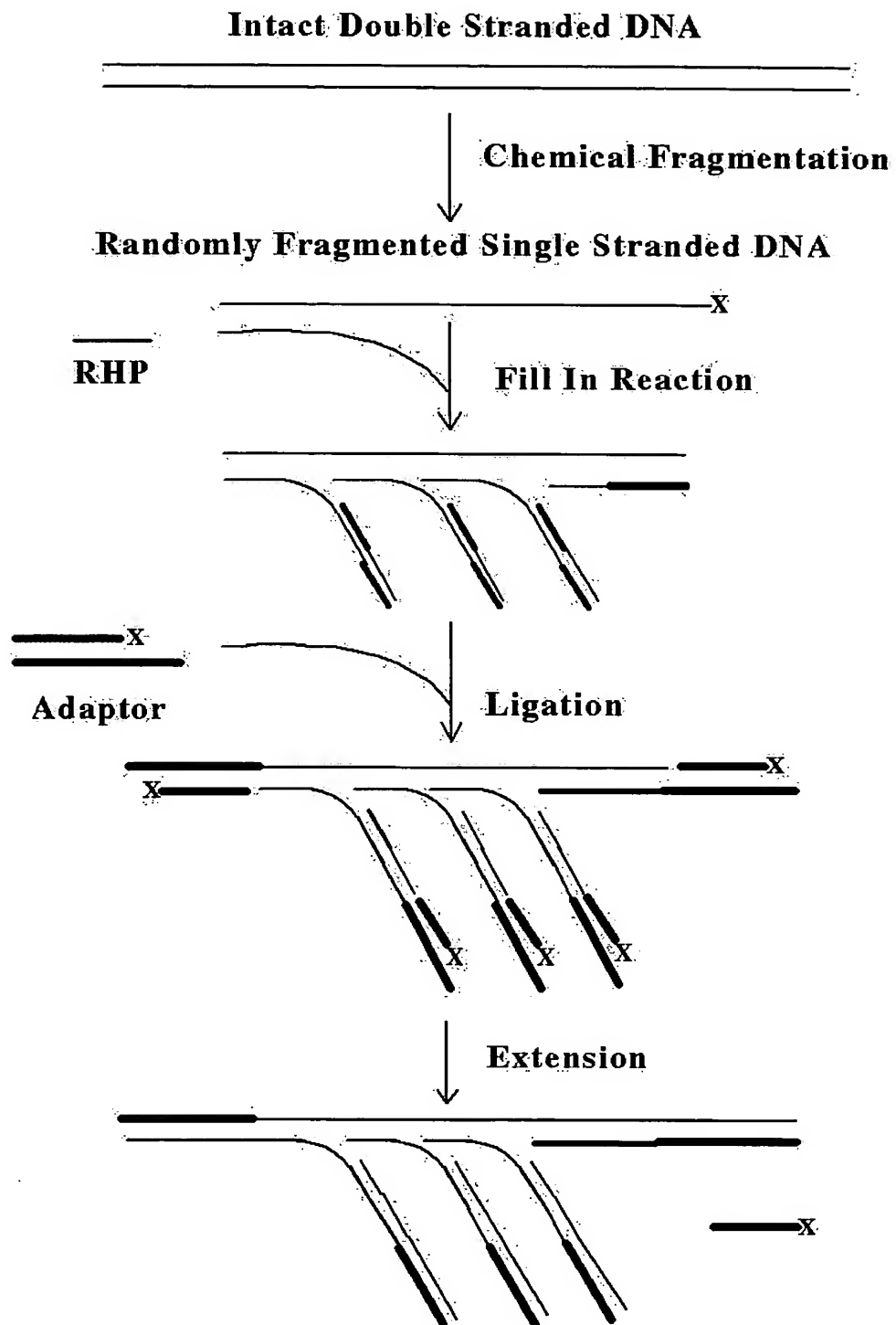


FIG. 3

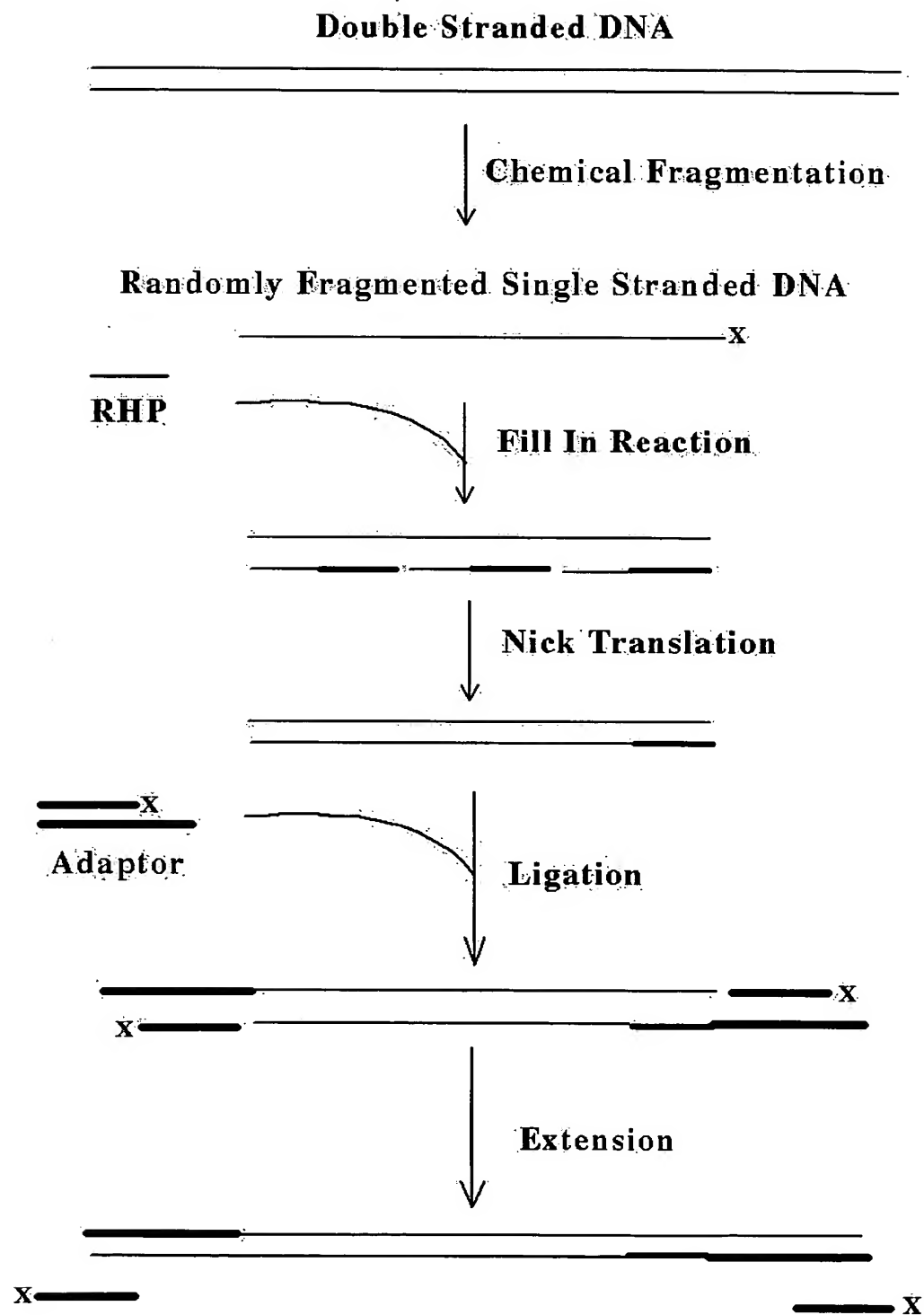


FIG. 4

A

**Blunt End Adaptor**

5'GTAATACGACTCACTATAGG-3' (SEQ ID NO:32)  
 3'-~~X~~TGACGTGATATCC-5' (SEQ ID NO:33)

**3' Overhang Adaptor**


5'GTAATACGACTCACTATAGGN-3' (SEQ ID NO:34)  
 3'-~~X~~TGACGTGATATCC-5' (SEQ ID NO:33)

**5' Overhang Adaptor**

5'GTAATACGACTCACTATAGG-3' (SEQ ID NO:32)  
 3'-~~X~~TGACGTGATATCCN-5' (SEQ ID NO:35)

B

**Linear T7HEG Adaptor**

5'-CCTATAGTGAGTCGTATTACTTT-TTTGTAATACGACTCACTATAGG-3' (SEQ ID NO:36)

**Annealed T7HEG Adaptor**


TTTGTAATACGACTCACTATAGG-3'  
 TTTCAATTATGCTGAGTGATATCC-5' (SEQ ID NO:36)

FIG. 5

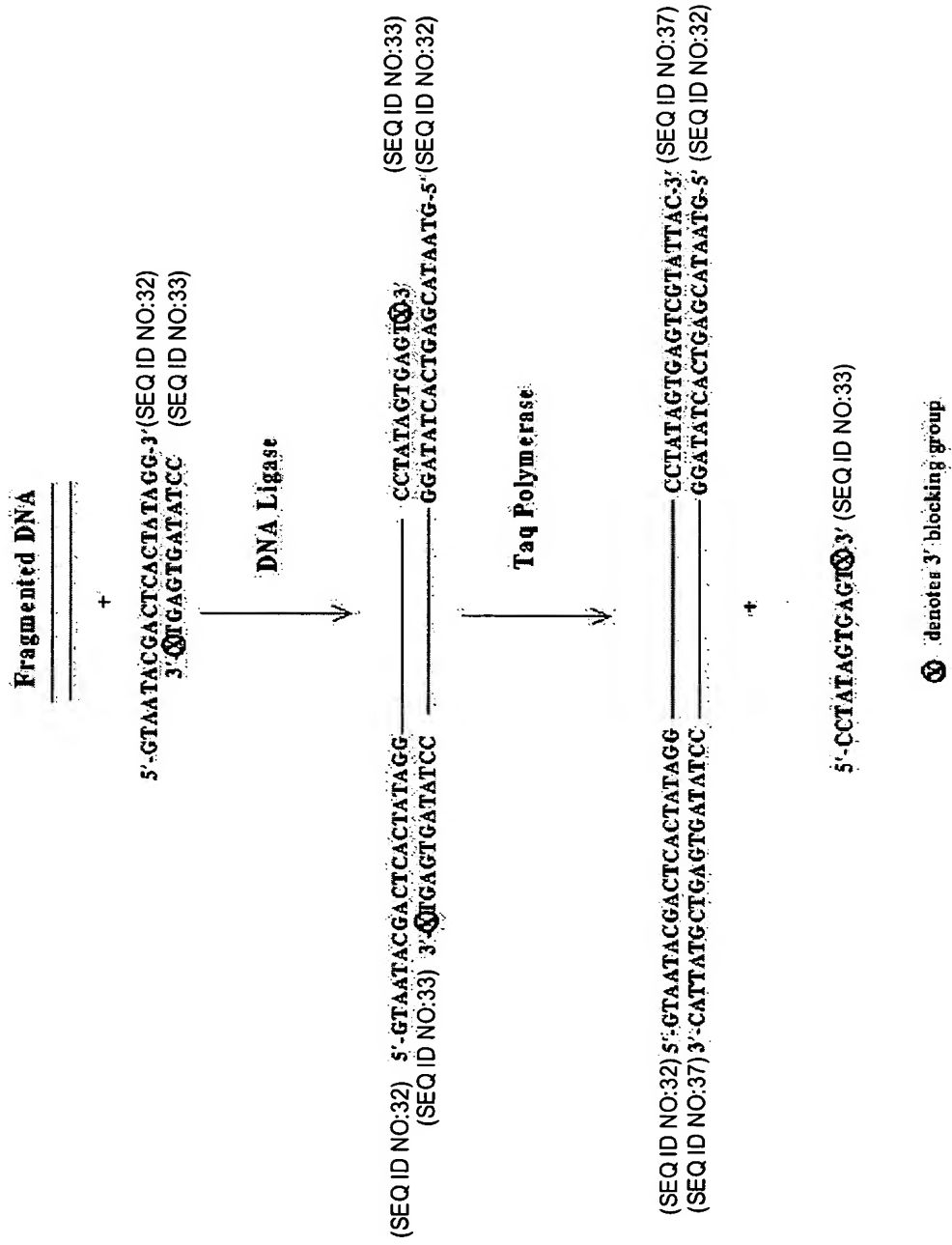
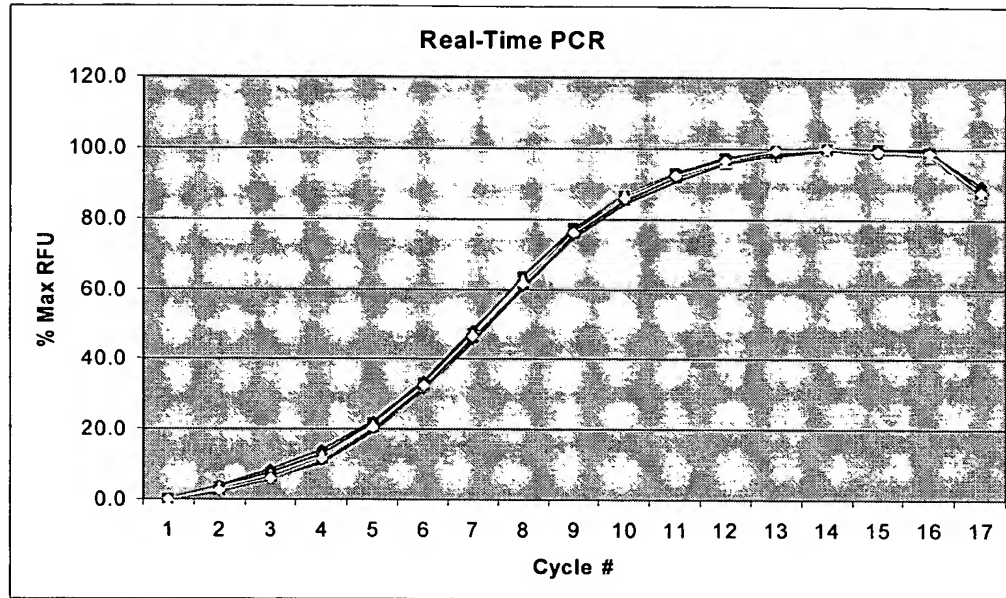


FIG. 6

A



B

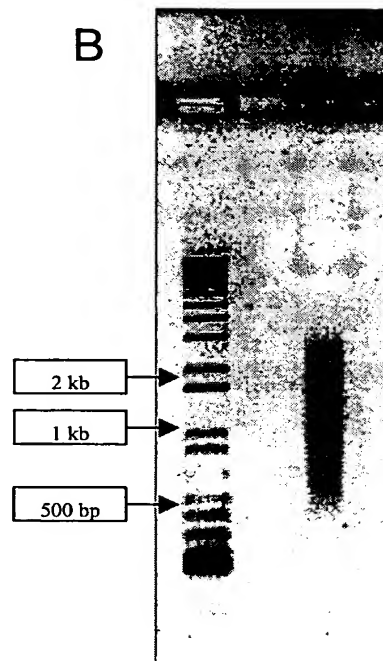
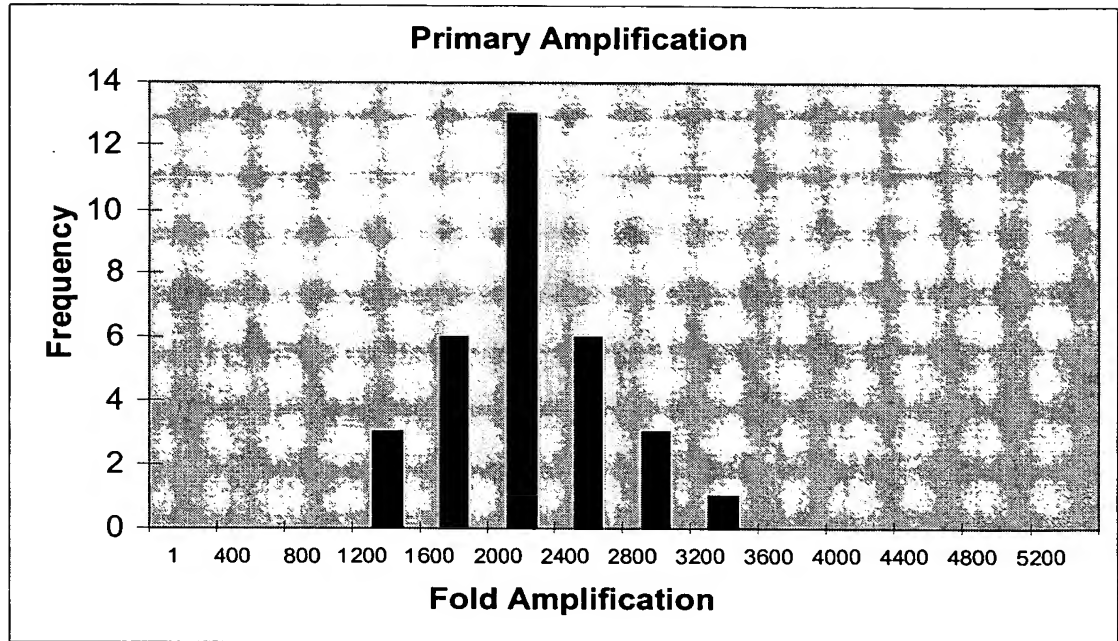


FIG. 7

A



B

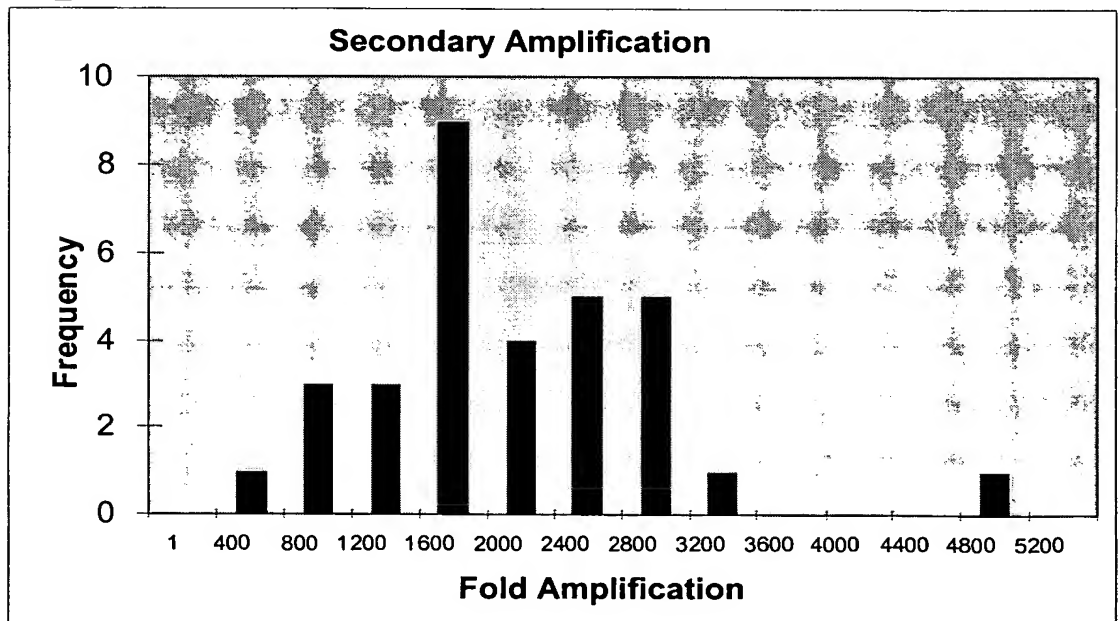
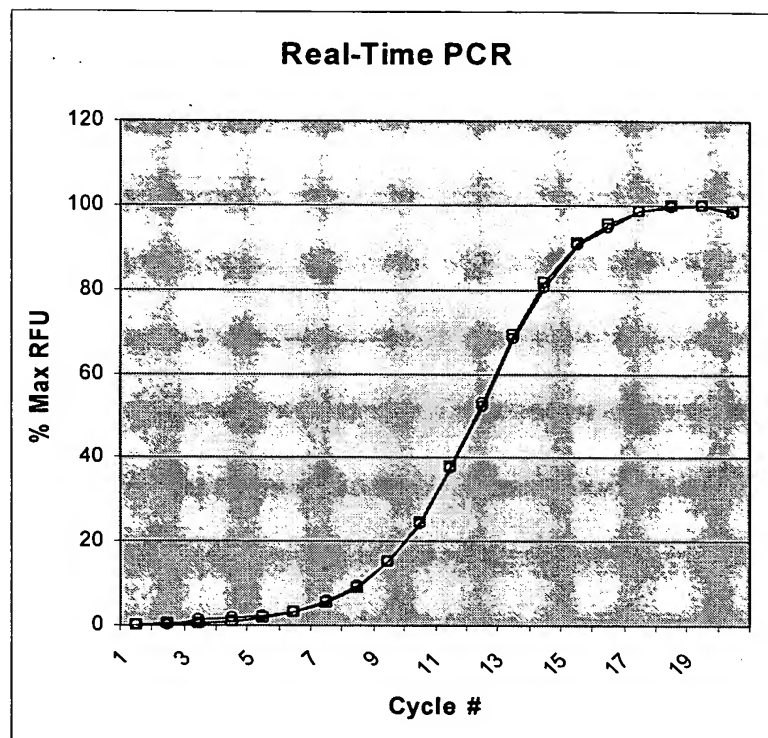


FIG. 8



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A



B

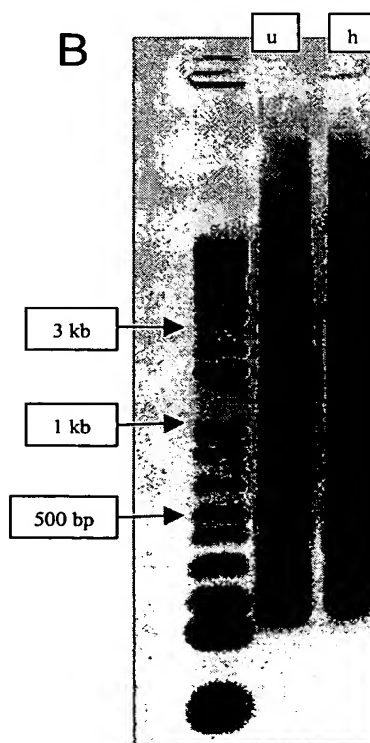


FIG. 9

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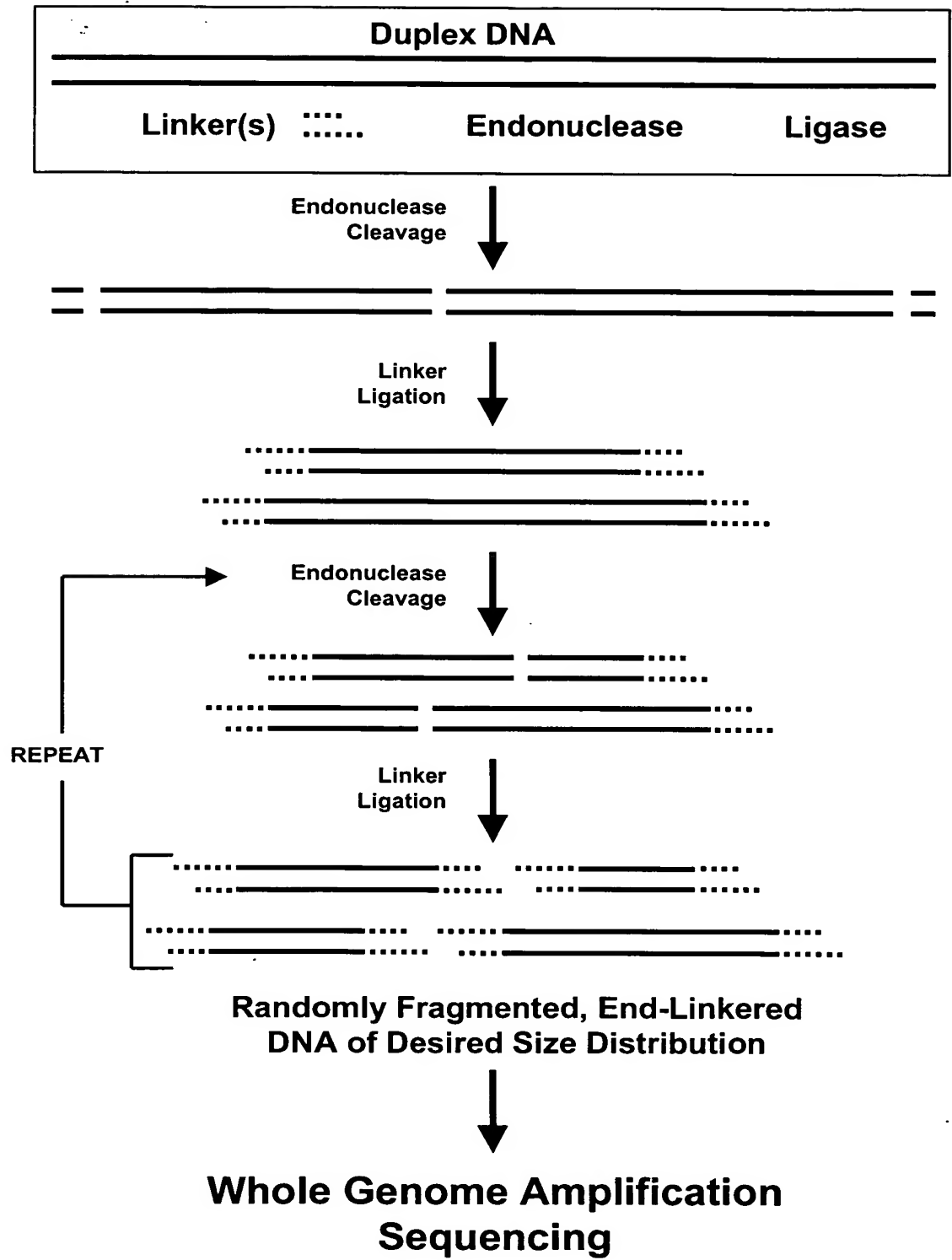


FIG. 10

**11A**      5' ..... 3'  
              3' ..... 5'

**11B**      5' N ..... 3'  
              3' ..... 5'

**11C**      5' ..... 3'  
              3' N ..... 5'

FIG. 11

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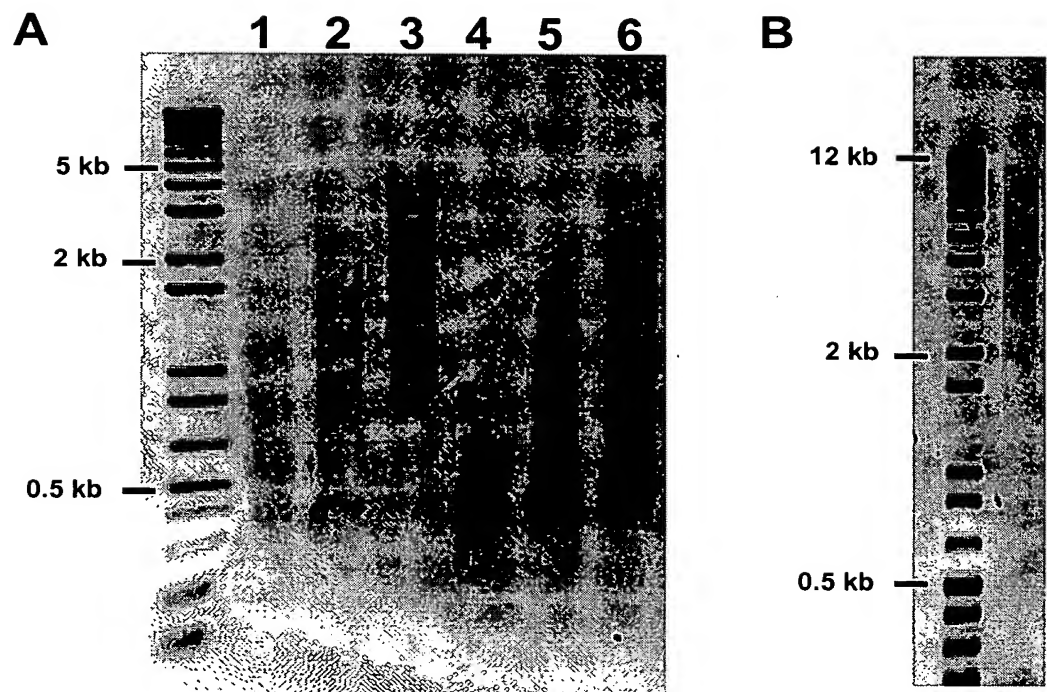


FIG. 12

- A**      5' - CCTATAGTGAGTX - 3' (SEQ ID NO:33)  
           3' - GGATATCACTCAGCATAATGA - 5' (SEQ ID NO:38)
- B**      5' - NCCTATAGTGAGTX - 3' (SEQ ID NO:39)  
           3' - GGATATCACTCAGCATAATGA - 5' (SEQ ID NO:38)
- C**      5' - NNCCTATAGTGAGTX - 3' (SEQ ID NO:39)  
           3' - GGATATCACTCAGCATAATGA - 5' (SEQ ID NO:38)
- D**      5' - CCTATAGTGAGTX - 3' (SEQ ID NO:33)  
           3' - NNGGATATCACTCAGCATAATGA - 5' (SEQ ID NO:40)
- E**      5' - CCTATAGTGAGTX - 3' (SEQ ID NO:33)  
           3' - NGGATATCACTCAGCATAATGA - 5' (SEQ ID NO:41)

FIG. 13

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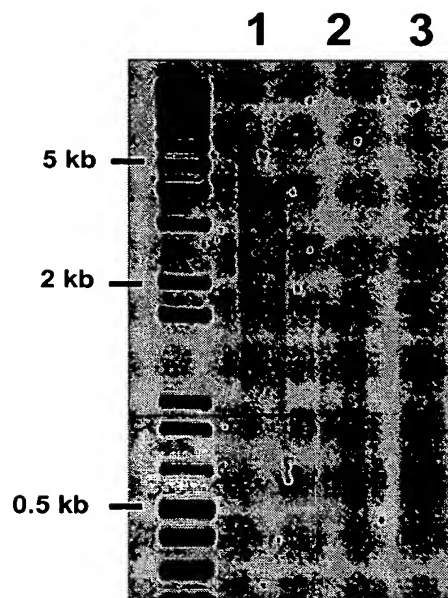
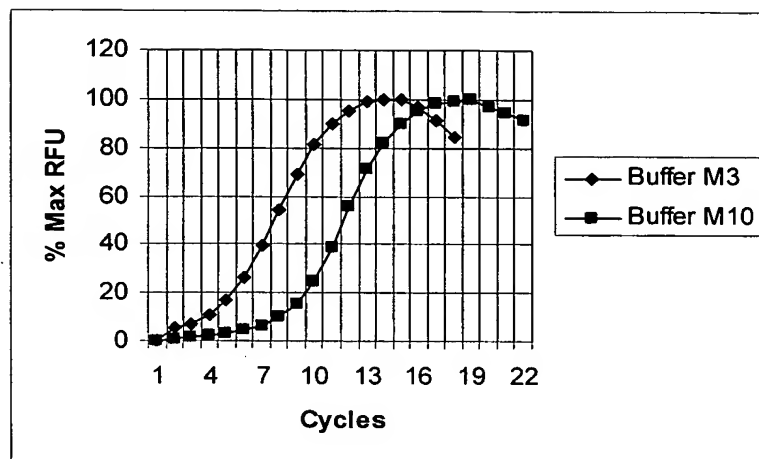
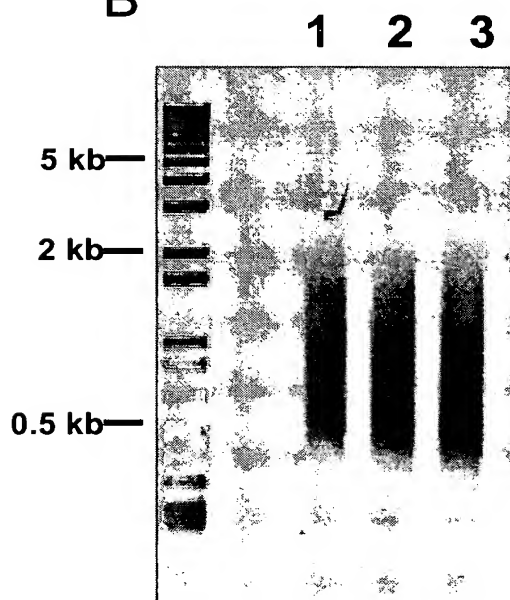


FIG. 14

A



B



C

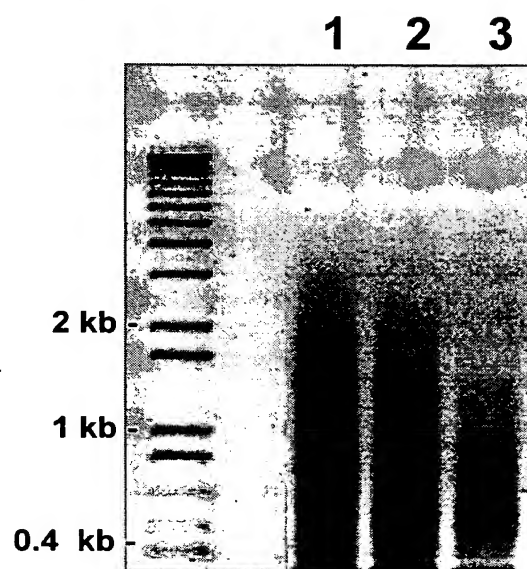


FIG. 15

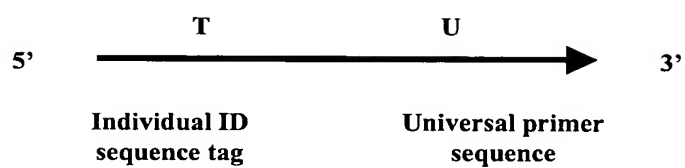
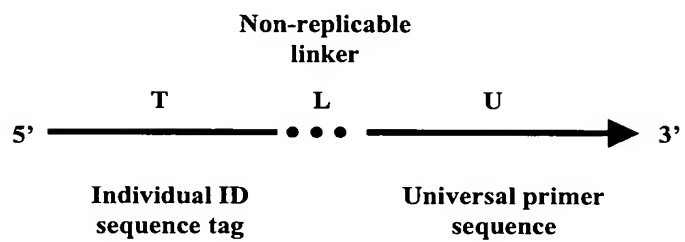
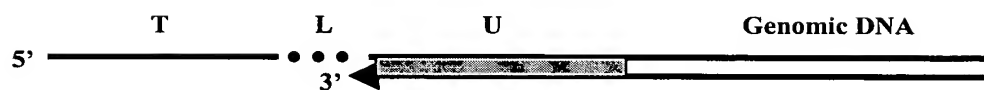
**A****B****C**

FIG. 16



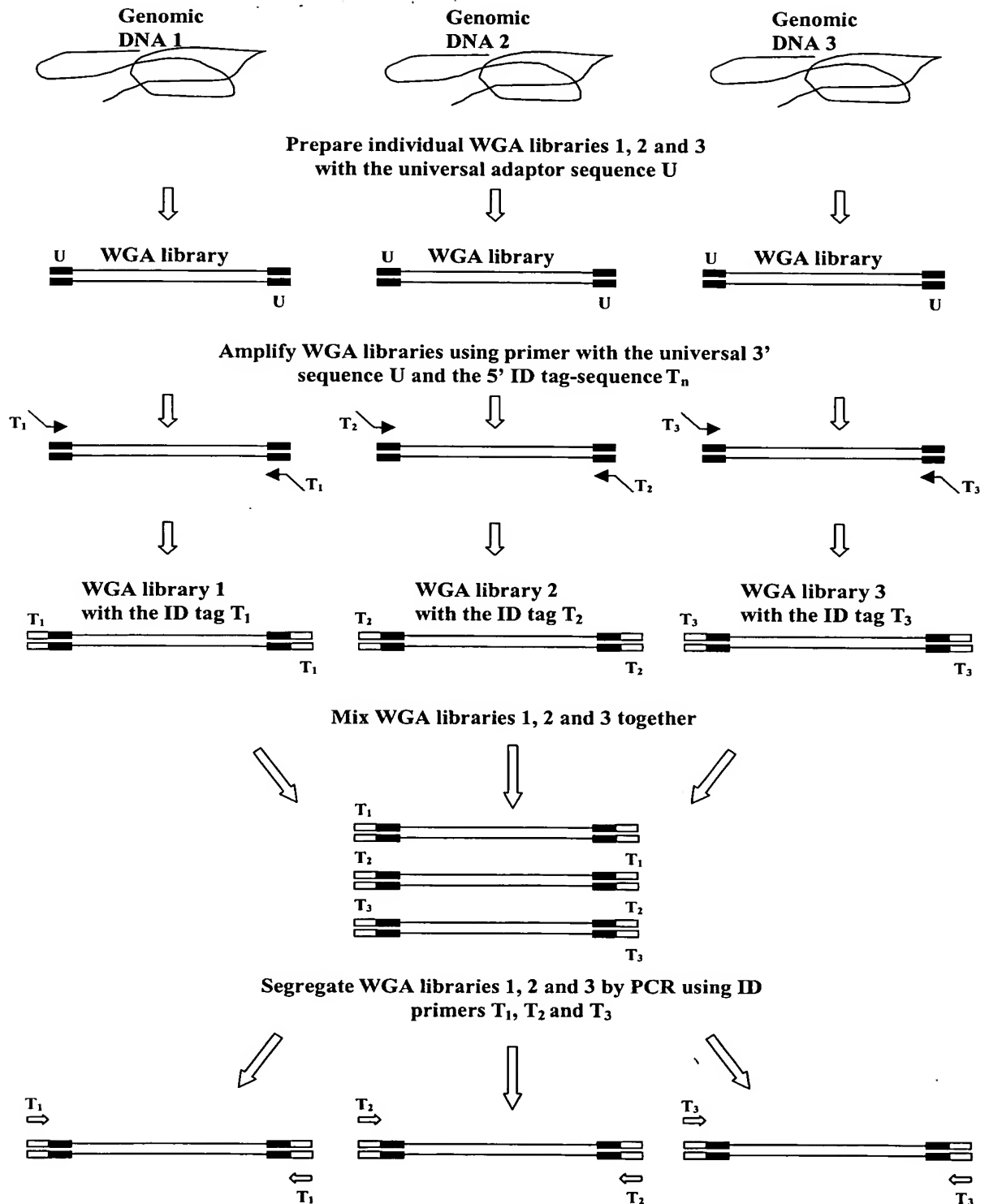


FIG. 17

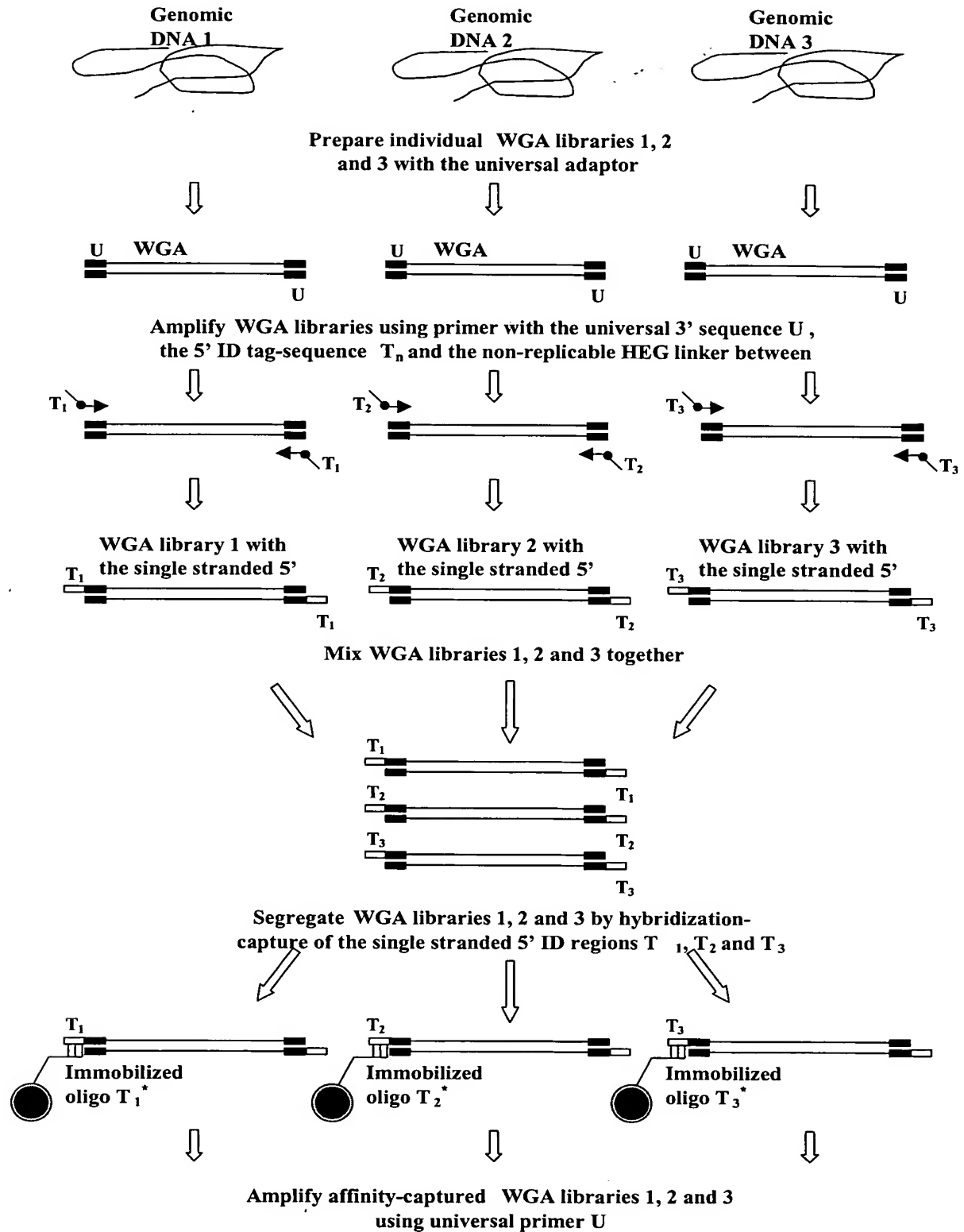


FIG. 18

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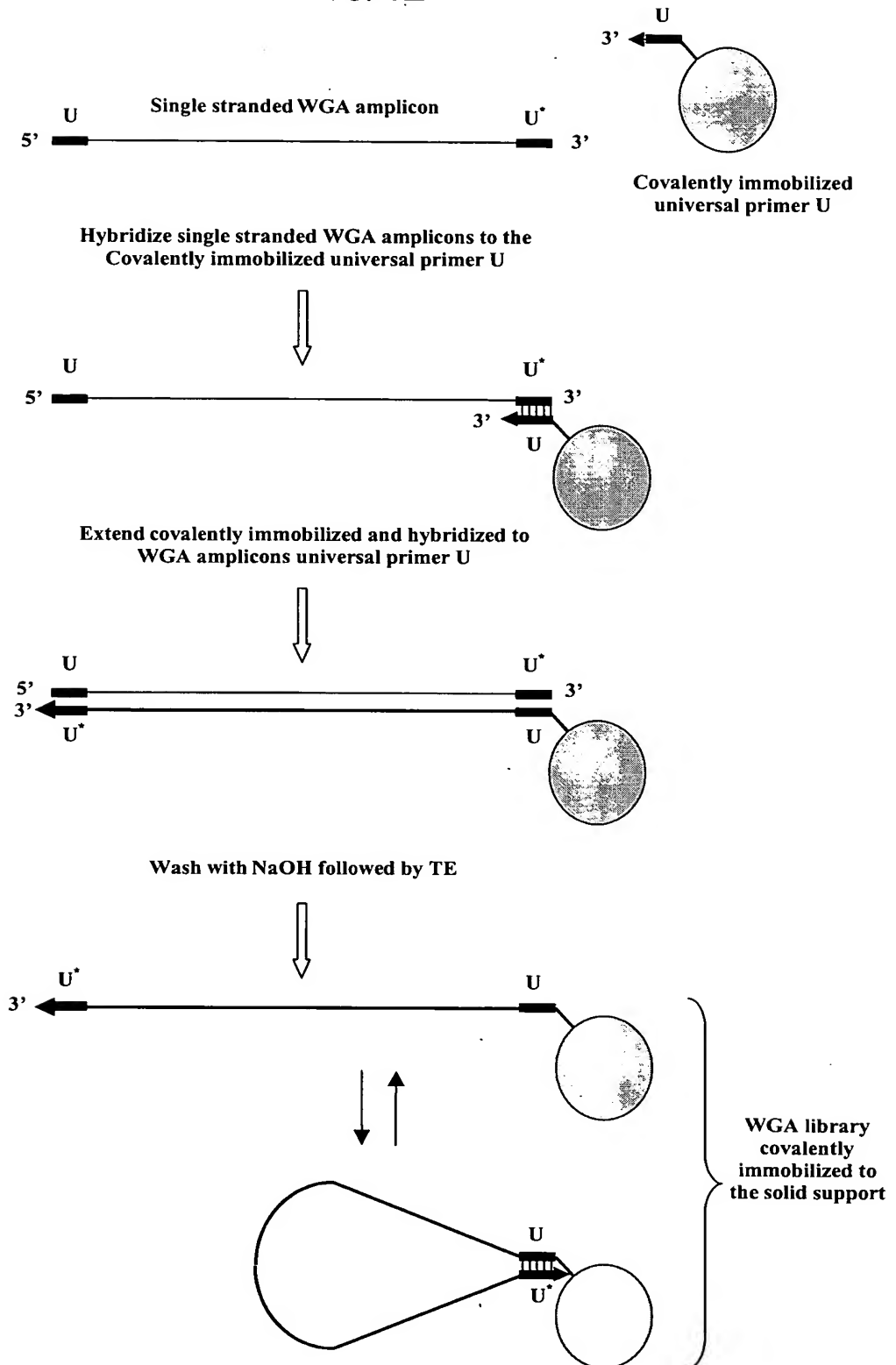
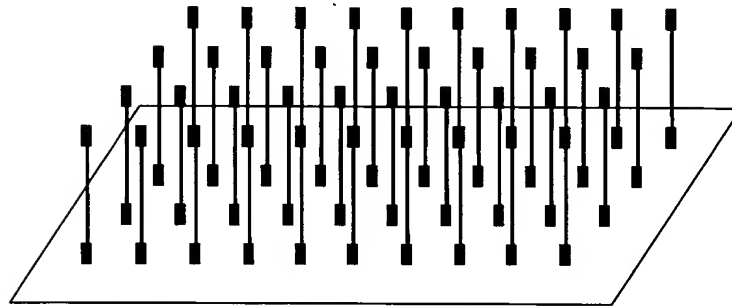


FIG. 19

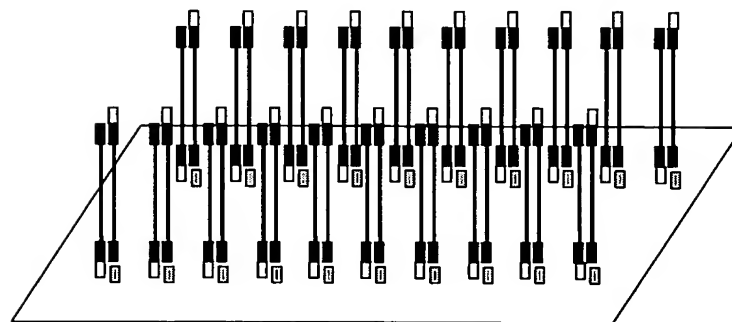
**A**

**Covalent attachment of the individual WGA libraries to a WGA micro-array by replication**



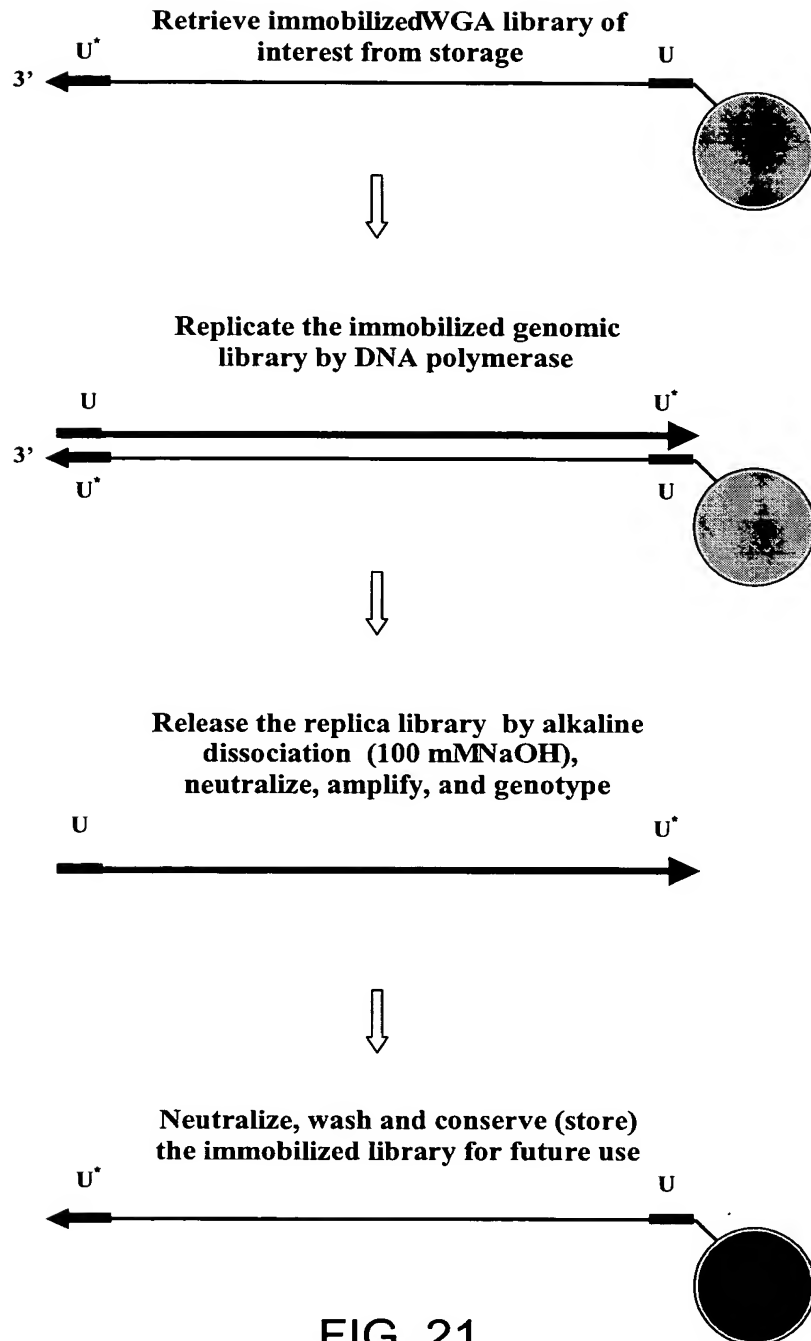
**B**

**Non-covalent attachment of the individual WGA libraries to a WGA micro-array by hybridization**

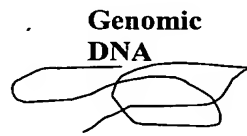


**WGA libraries  
with the non-  
replicable  
universal primer**

**FIG. 20**



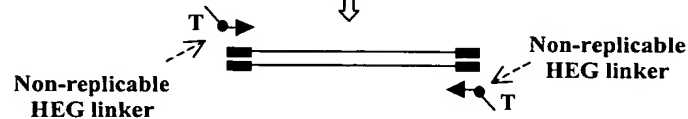
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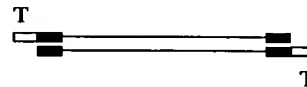
Prepare WGA library with the  
universal adaptor sequence U



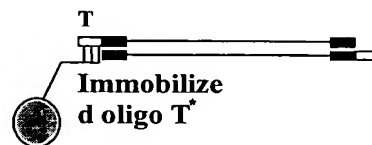
Amplify WGA library using primer with the universal 3' sequence  
U, the 5' ID tag-sequence T and the non-replicable HEG linker  
between them



WGA library with  
the single stranded



Immobilize WGA library by hybridization-capture  
of the single stranded 5' ID region T



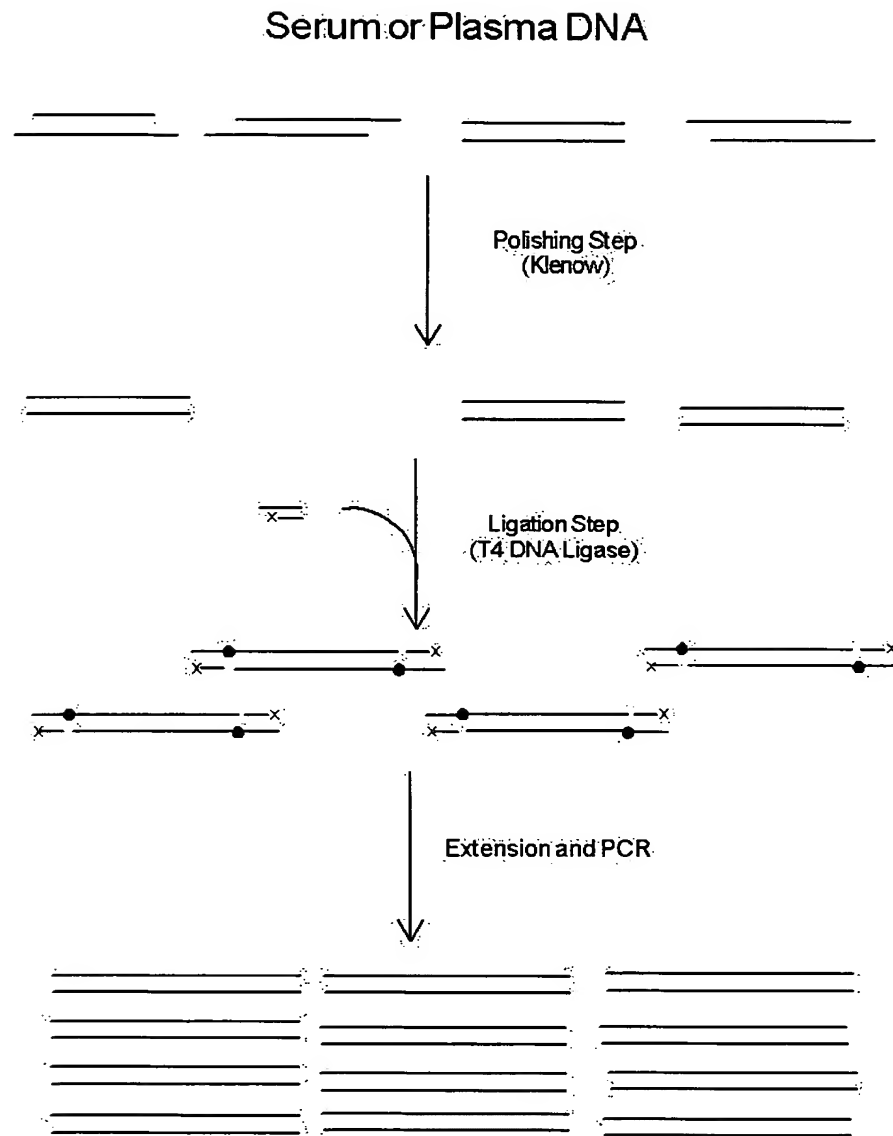
Wash the immobilized WGA library to remove  
contaminations



Release by heat

FIG. 22

A)



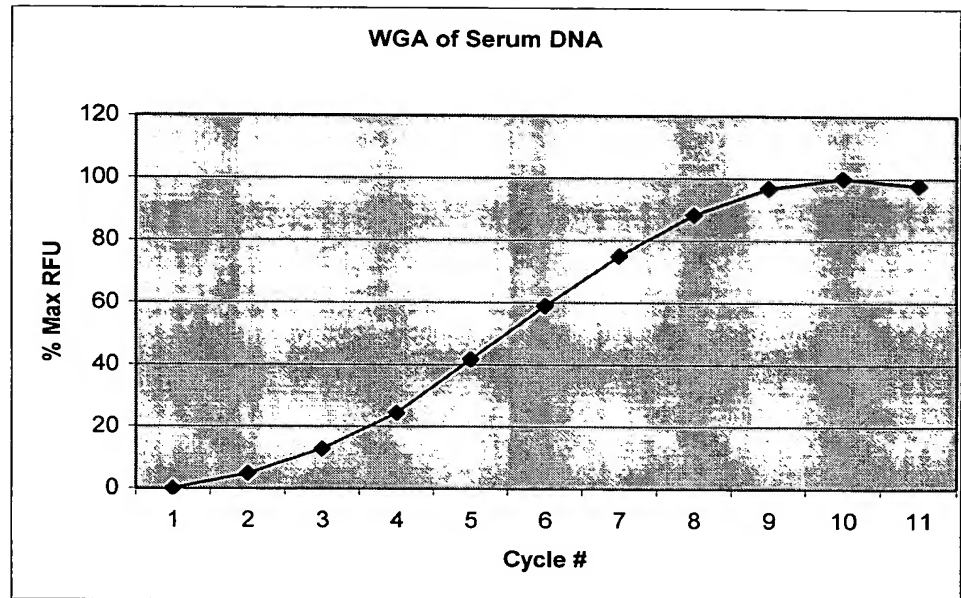
B)

**Yb8 Forward: 5'-CGAGGCGGGTGGATCATGAGGT-3' (SEQ ID NO:48)**

**Yb8 Reverse: 5'-TCTGTCGCCCAGGCCGGACT-3' (SEQ ID NO:49)**

FIG. 23

A)



B)

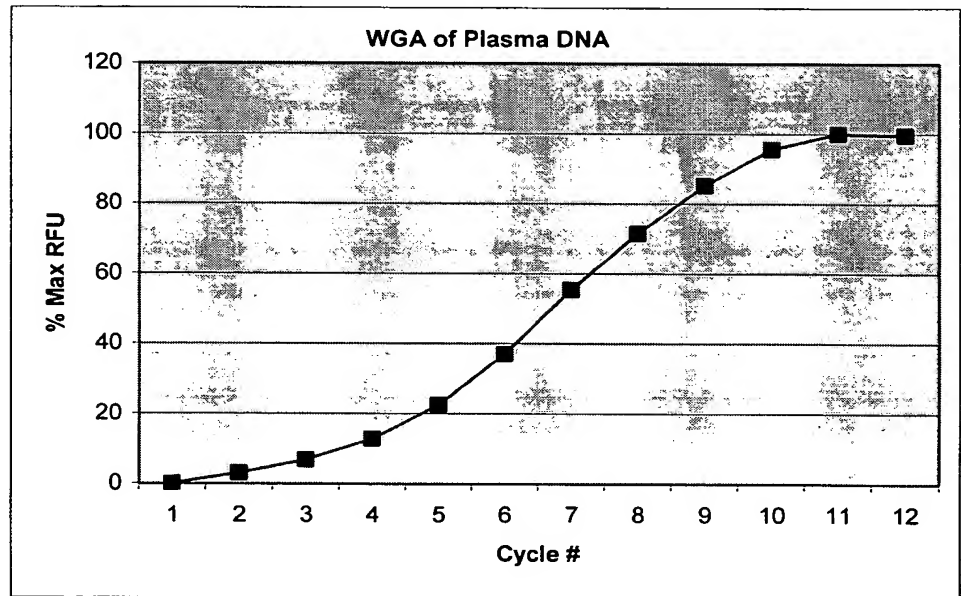
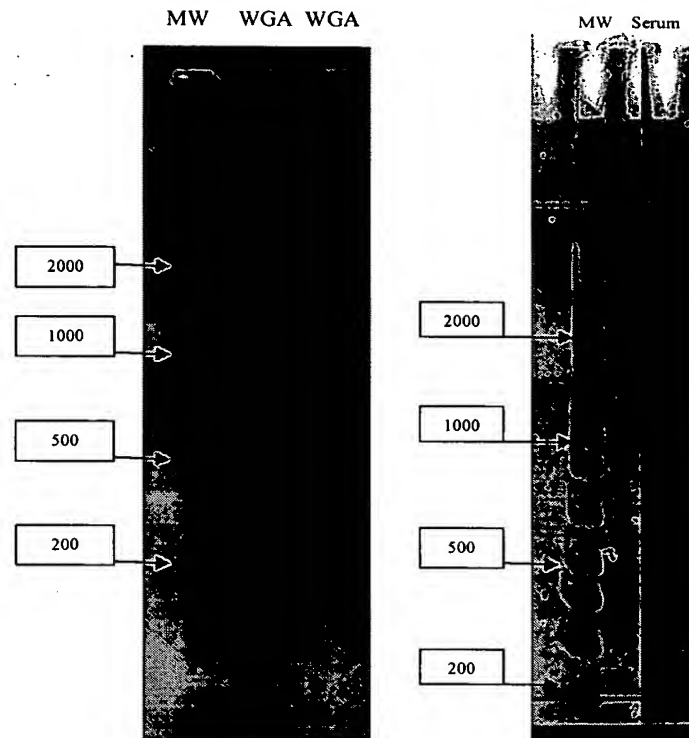


FIG. 24



A)



B)

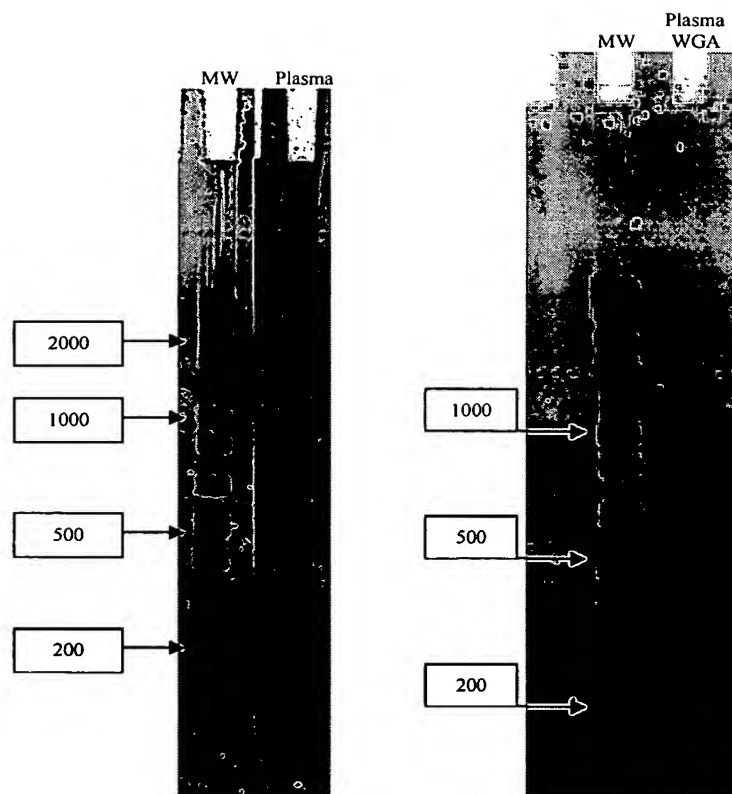


FIG. 25

## STS Representation of Serum DNA and WGA Product

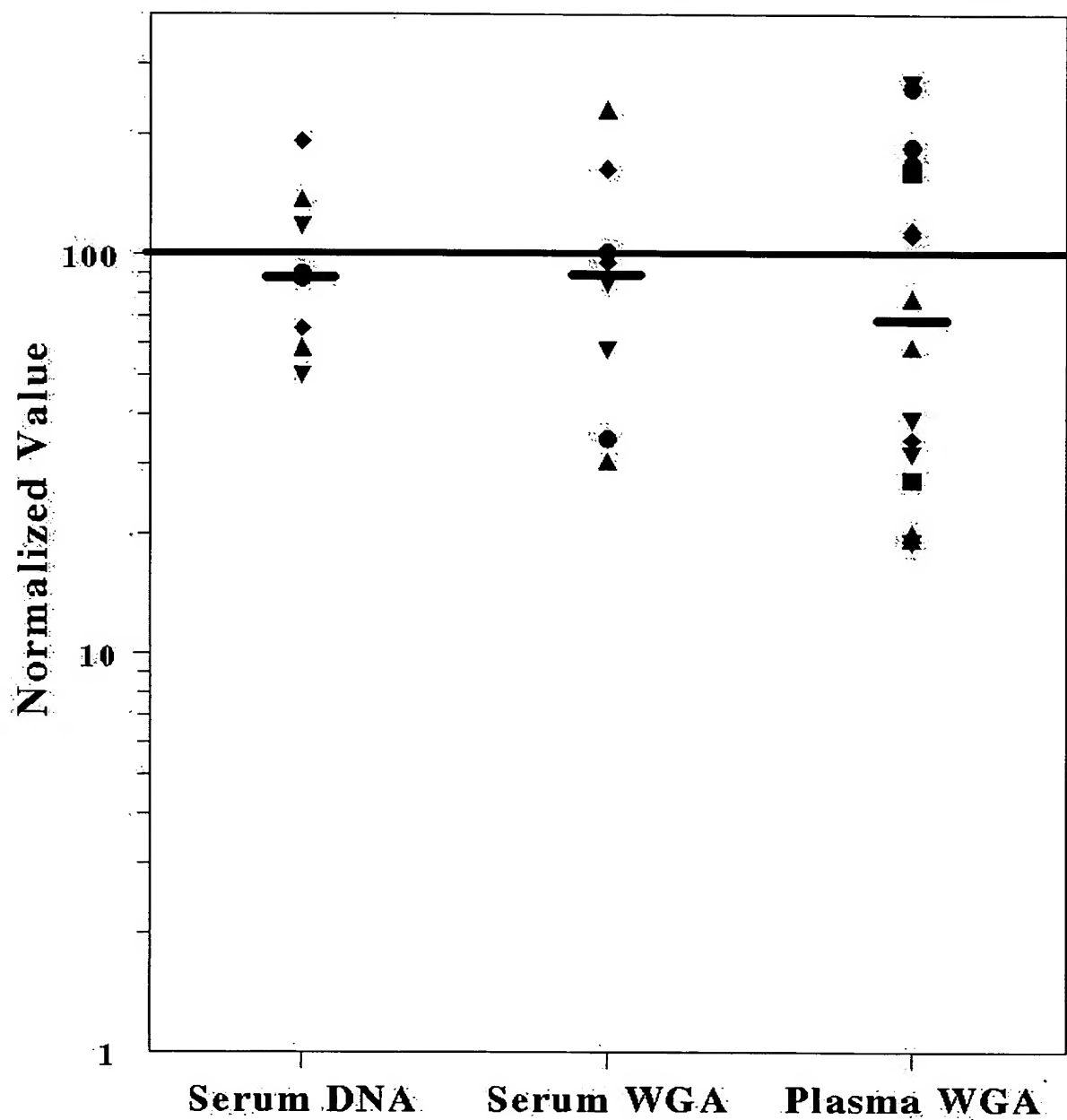


FIG. 26

## Serum or Plasma DNA

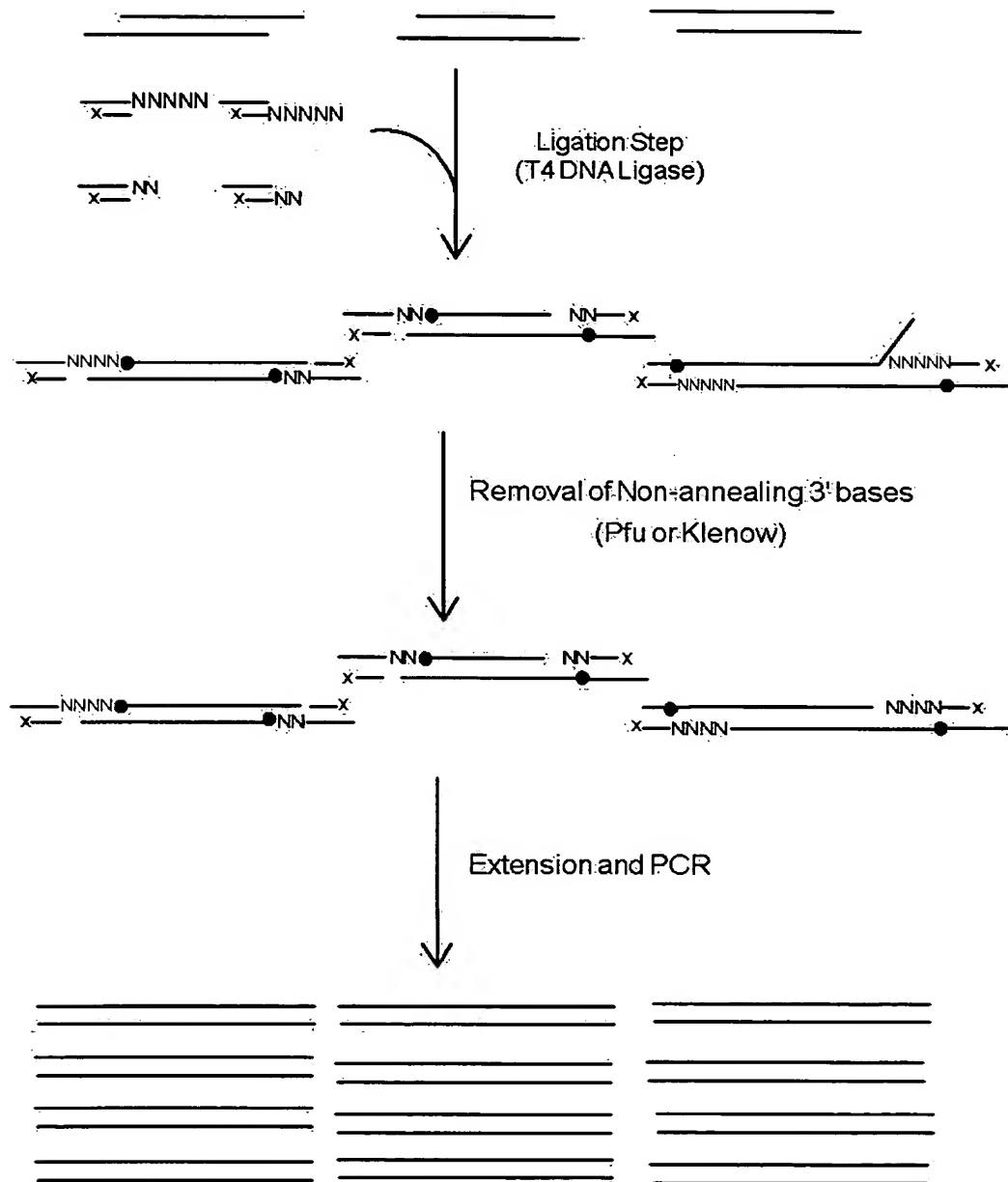


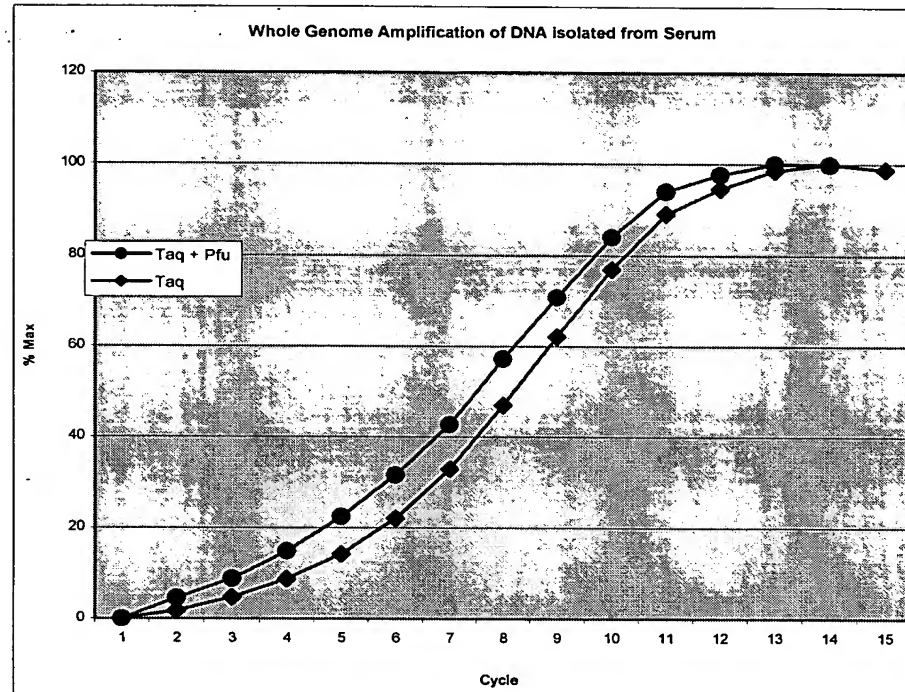
FIG. 27

Figure Y2

<u>5' T7N Overhang Adaptors</u>	<u>3' T7N Overhang Adaptors</u>
<b>N2T7</b>	<b>T7N2</b>
5-GTAATACGACTCACTATAGG-3' (SEQ ID NO:32)	(SEQ ID NO:44)
3'-/3AmMC7/TGAGTGATATCCNN-5' (SEQ ID NO:12)	5'-GTAATACGACTCACTATAGGNN-3'
	3'-/3AmMC7/TGAGTGATATCC-5'
	(SEQ ID NO:33)
<b>N3T7</b>	<b>T7N3</b>
5-GTAATACGACTCACTATAGG-3' (SEQ ID NO:32)	(SEQ ID NO:45)
3'-/3AmMC7/TGAGTGATATCCNNN-5' (SEQ ID NO:13)	5'-GTAATACGACTCACTATAGGNNN-3'
	3'-/3AmMC7/TGAGTGATATCC-5'
	(SEQ ID NO:33)
<b>N4T7</b>	<b>T7N4</b>
5-GTAATACGACTCACTATAGG-3' (SEQ ID NO:32)	(SEQ ID NO:46)
3'-/3AmMC7/TGAGTGATATCCNNNN-5' (SEQ ID NO:42)	5'-GTAATACGACTCACTATAGGNNNN-3'
	3'-/3AmMC7/TGAGTGATATCC-5'
	(SEQ ID NO:33)
<b>N5T7</b>	<b>T7N5</b>
5-GTAATACGACTCACTATAGG-3' (SEQ ID NO:32)	(SEQ ID NO:47)
3'-/3AmMC7/TGAGTGATATCCNNNNN-5'	5'-GTAATACGACTCACTATAGGNNNNN-3'
(SEQ ID NO:43)	3'-/3AmMC7/TGAGTGATATCC-5'
	(SEQ ID NO:33)

FIG. 28

A)



B)

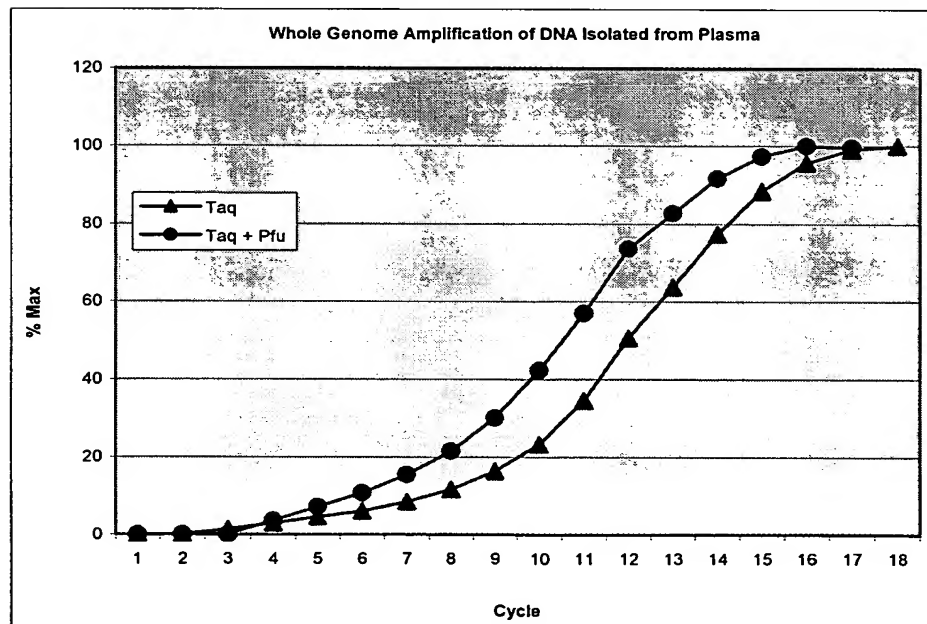


FIG. 29

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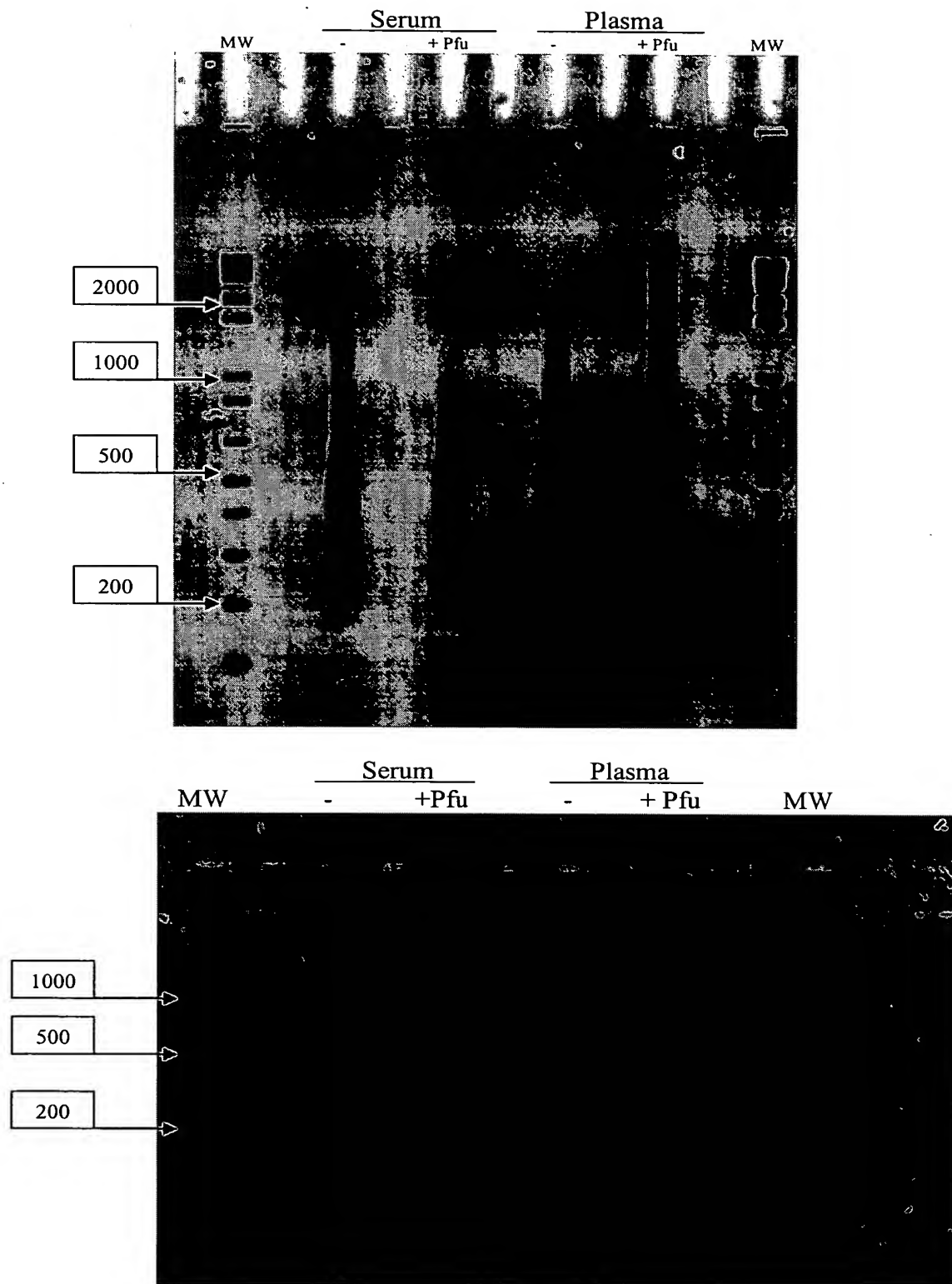


FIG. 30

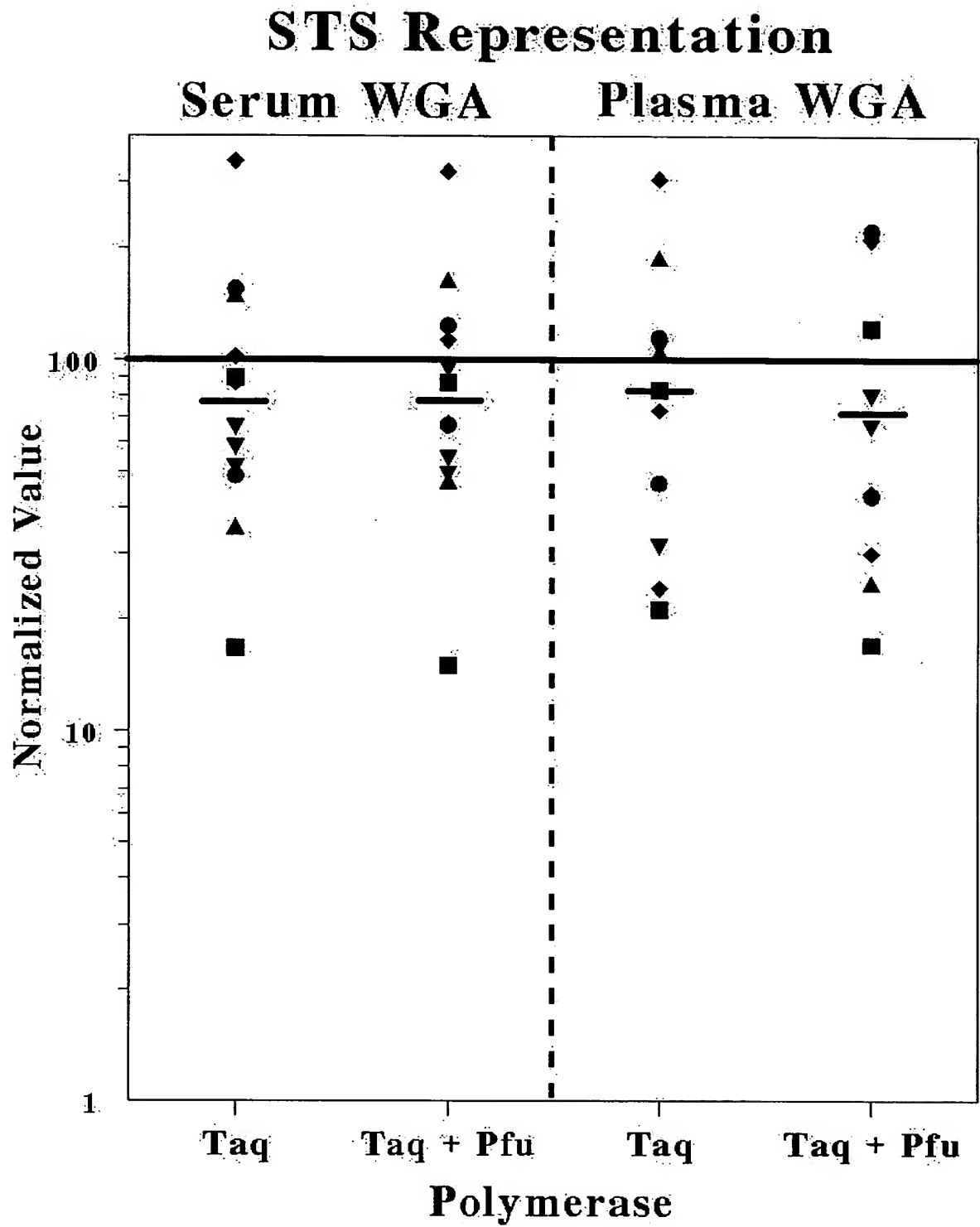


FIG. 31

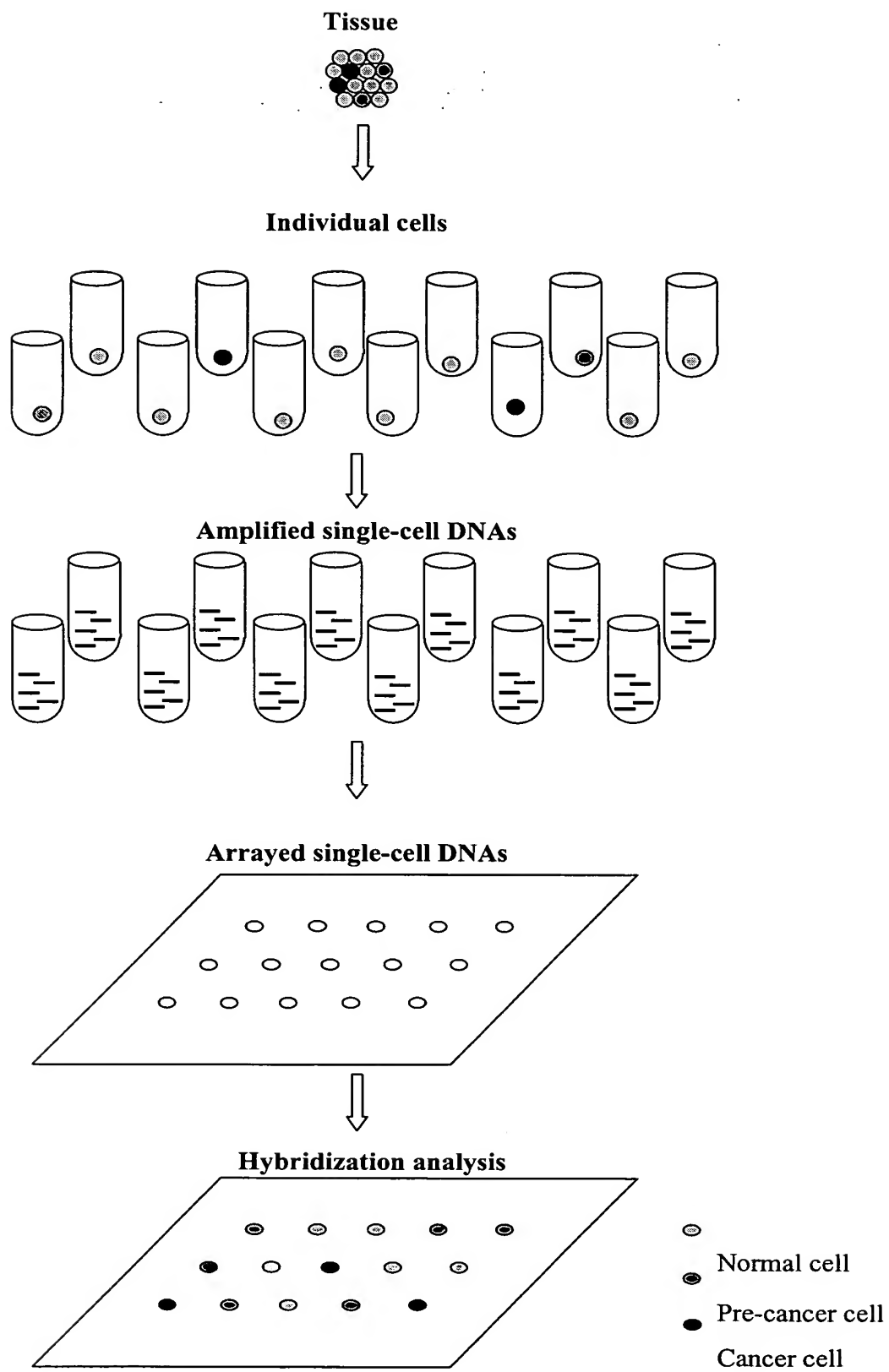


FIG. 32



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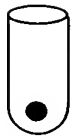
Tissue



Individual cells



Cell 1  
(normal)



Cell 2  
(cancer)



Cell 3  
(normal)



Cell 4  
(normal)



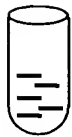
Cell 5  
(cancer)



Single-cell amplified DNAs



DNA 1



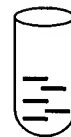
DNA 2



DNA 3



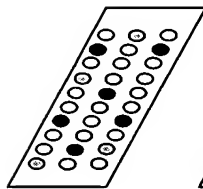
DNA 4



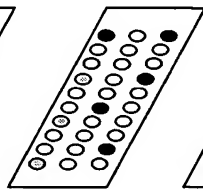
DNA 5



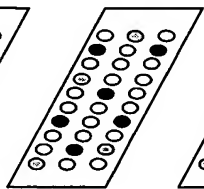
Tissue cell heterogeneity revealed by hybridization of the amplified  
single-cell DNAs to a micro-array



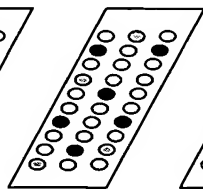
Normal  
genotype



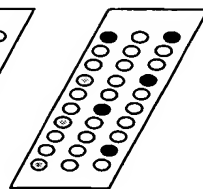
Cancer  
genotype



Normal  
genotype



Normal  
genotype



Cancer  
genotype

FIG. 33

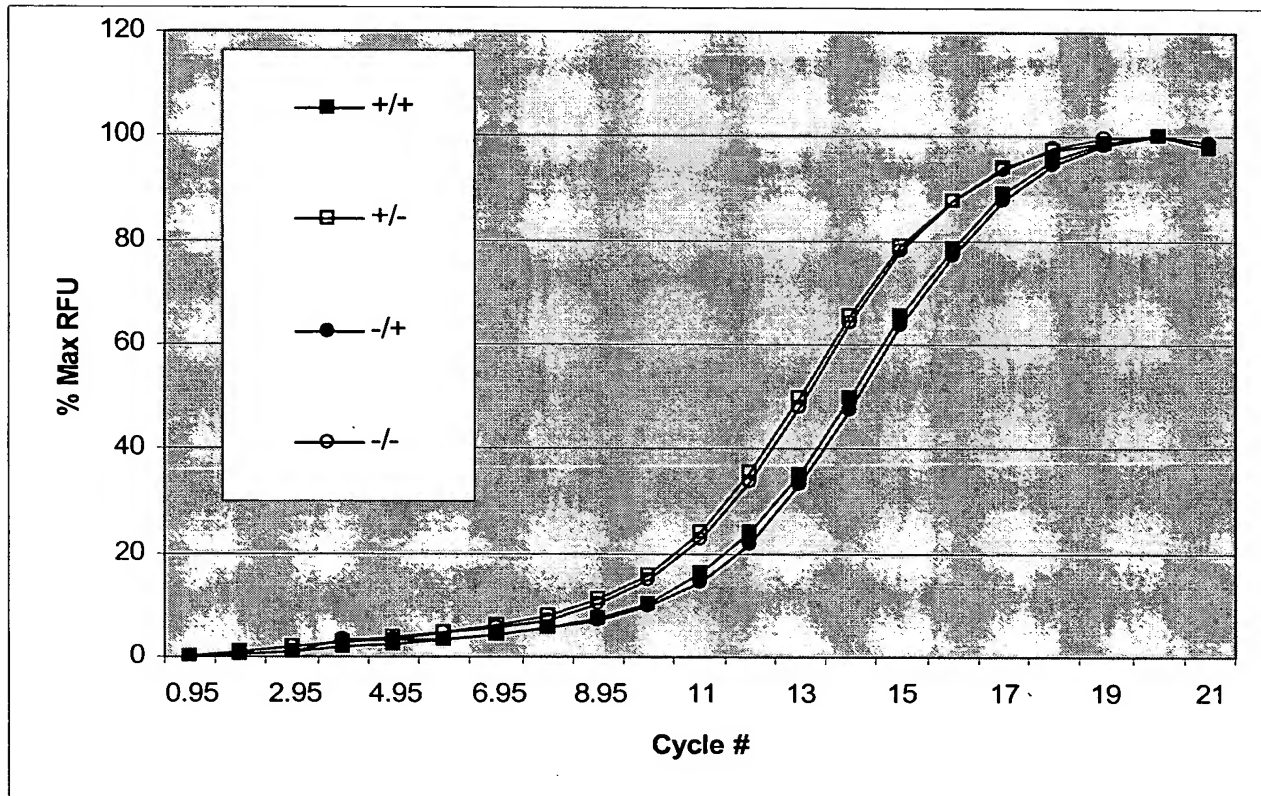


FIG. 34

# Representation of STS Sites

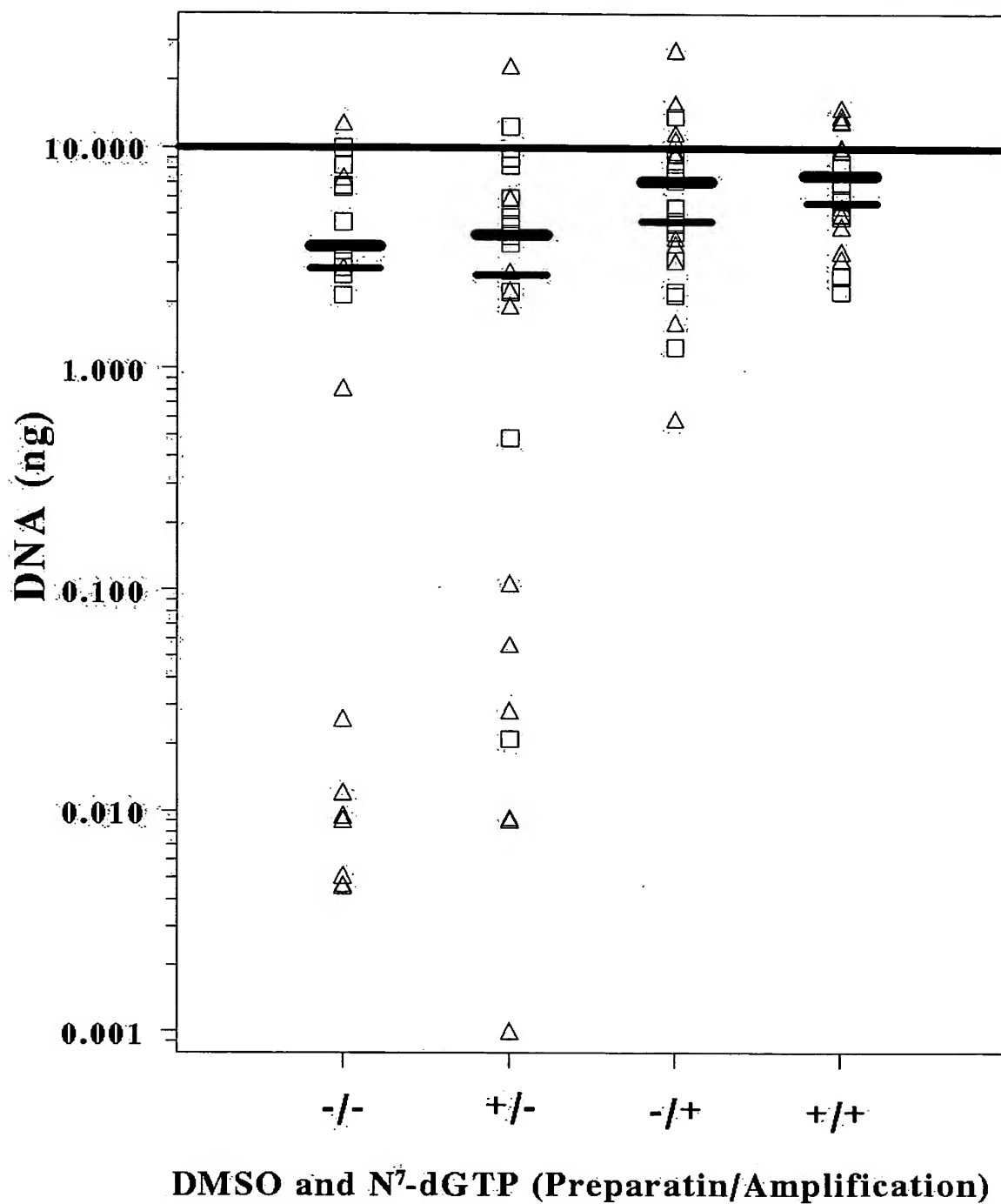
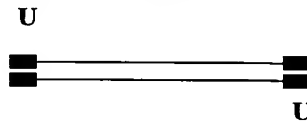


FIG. 35

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Prepare and amplify WGA or  
WTA library using universal  
primer sequence U



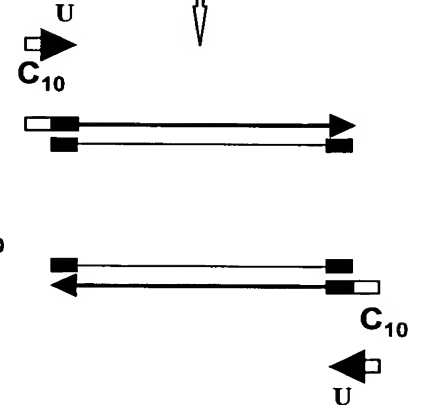
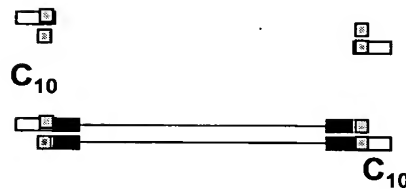
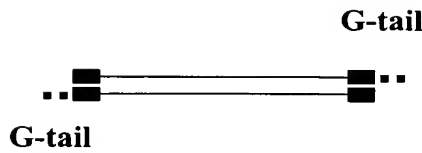
**A** Add poly dG tail by  
terminal  
deoxynucleotidyl  
transferase



**B** Ligate adaptor  
containing  $C_{10}$   
sequence at the 5' end  
of the long  
oligonucleotide



**C** Replicate amplified  
WGA library using  
modified primer U  
with  $C_{10}$  sequence at  
the 5' end



Targeted amplification of one or multiple DNA regions using universal primer  $C_{10}$   
and one or multiple specific primers P

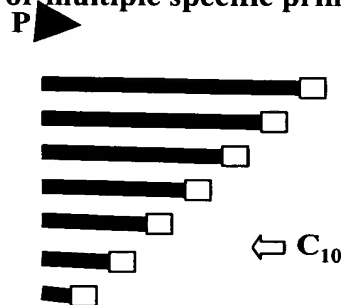
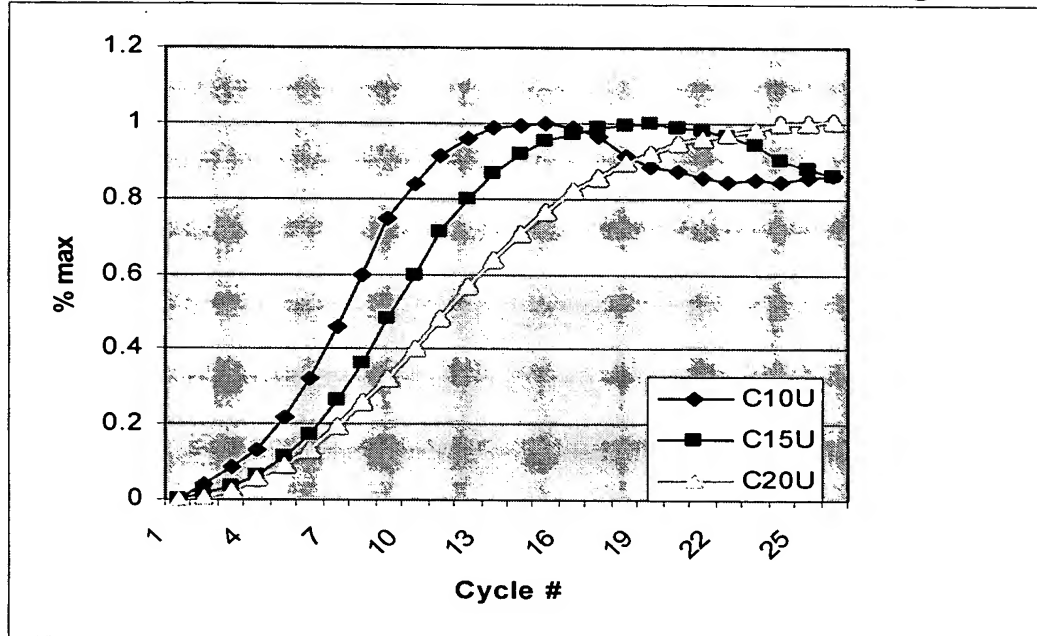


FIG.36

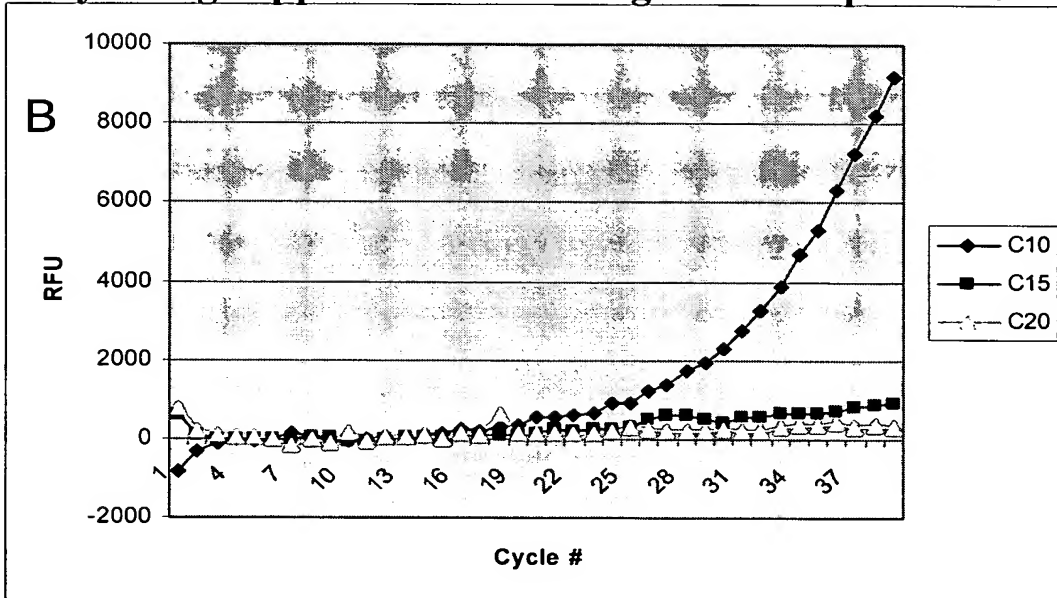
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**A WGA Incorporation terminal Poly-C-tags**

5'-CCCCCCCCCGTAATACGACTCACTATA-3' (SEQ ID NO:50)

5'-CCCCCCCCCCCCCCCC GTAATACGACTCACTATA-3' (SEQ ID NO:51)

5'-CCCCCCCCCCCCCCCCCCCC GTAATACGACTCACTATA-3' (SEQ ID NO:52)

**B Poly-C-tag suppression of whole genome amplification**

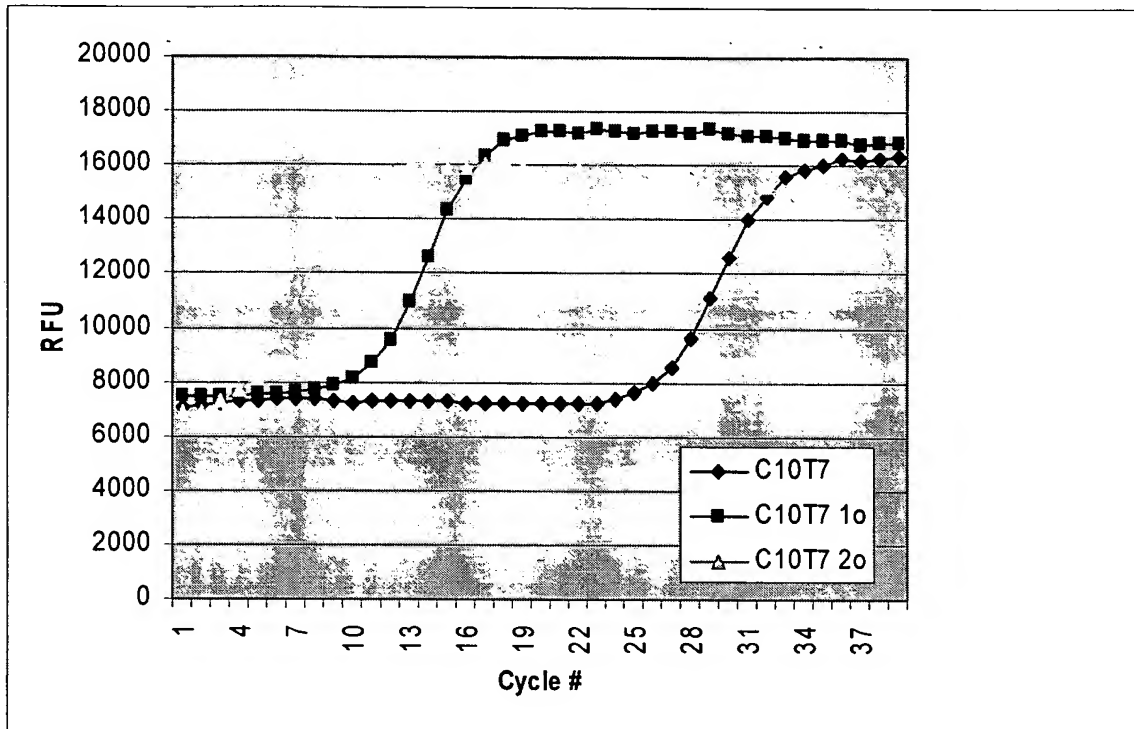
5'-CCCCCCCCCCC-3' (SEQ ID NO:53)

5'-CCCCCCCCCCCCCCCC-3' (SEQ ID NO:54)

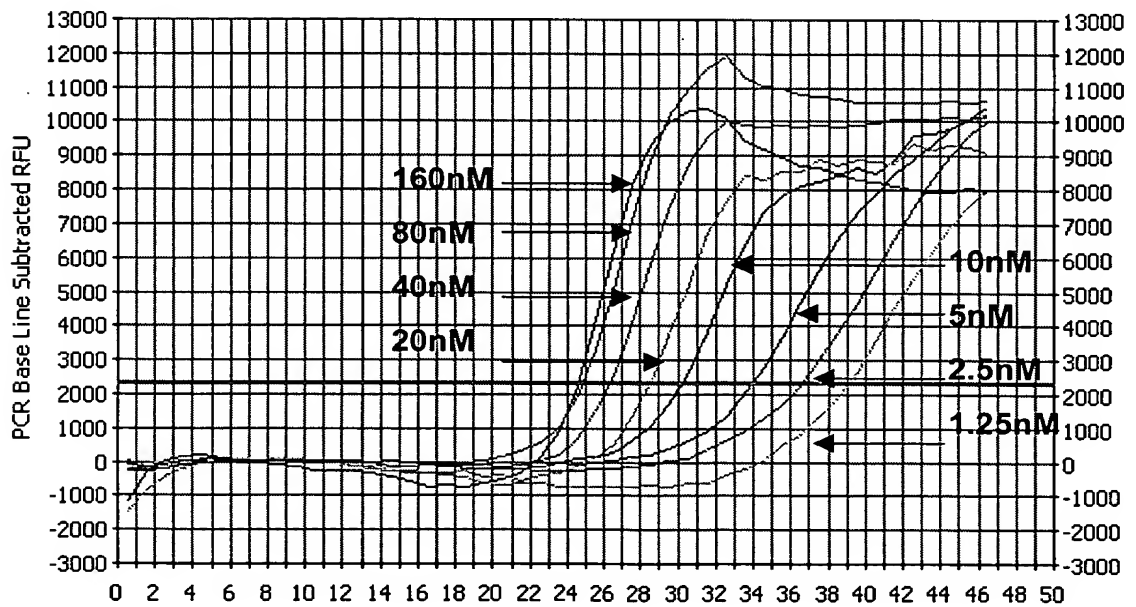
5'-CCCCCCCCCCCCCCCCCCCC-3' (SEQ ID NO:55)

**FIG.37**

# Targeted amplification from poly-C<sub>10</sub> WGA Libraries

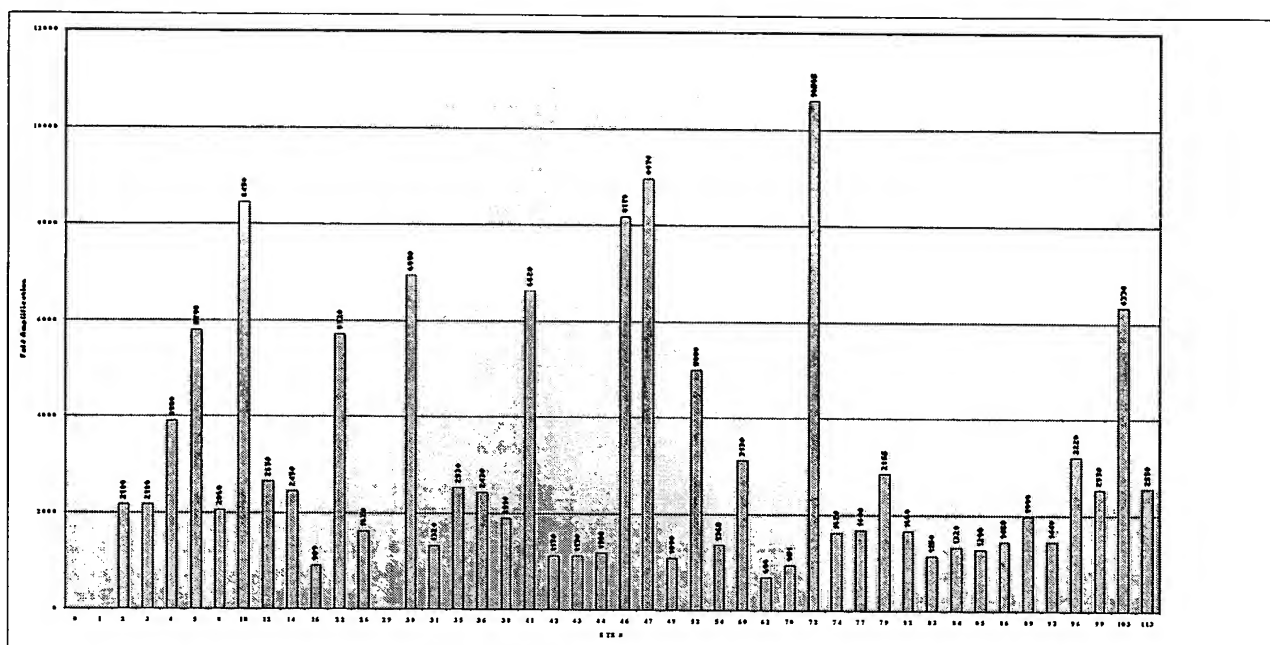
**A**

## TGA Specific Primer Titration

**B****FIG. 38**

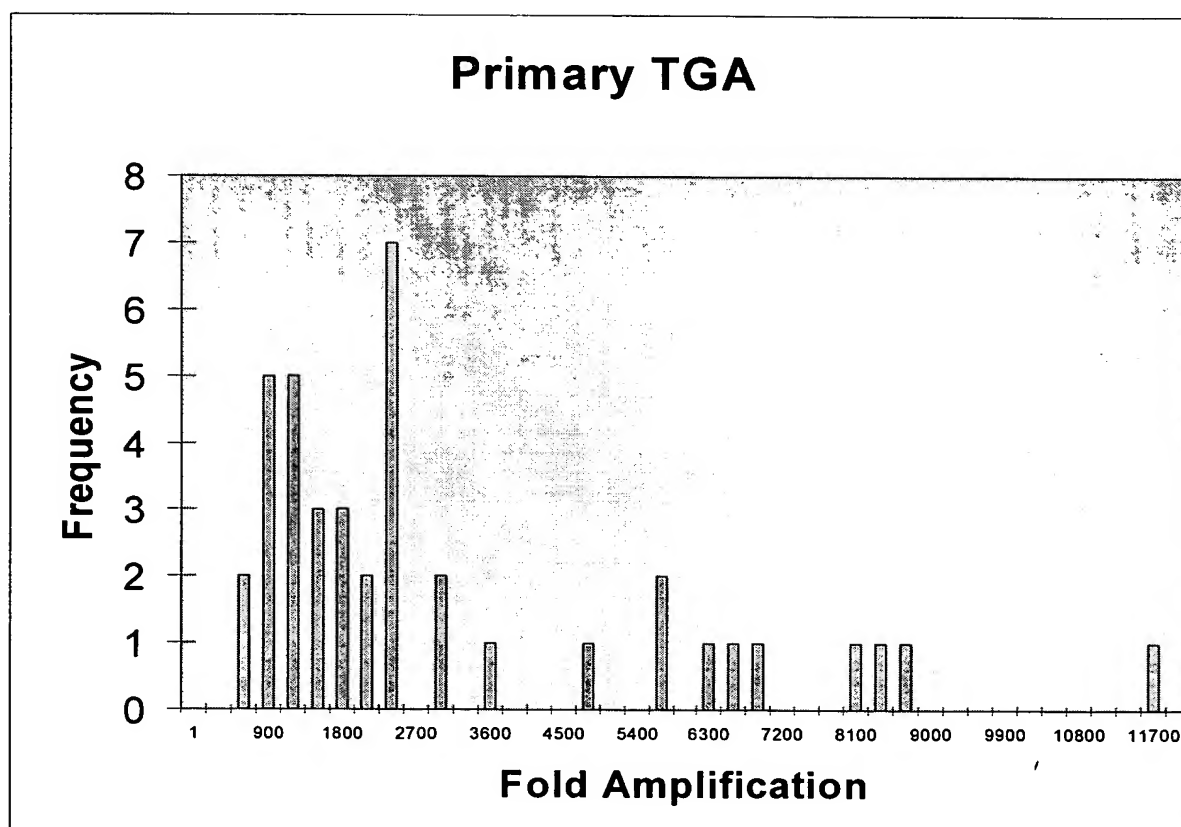
A

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B

## Primary TGA



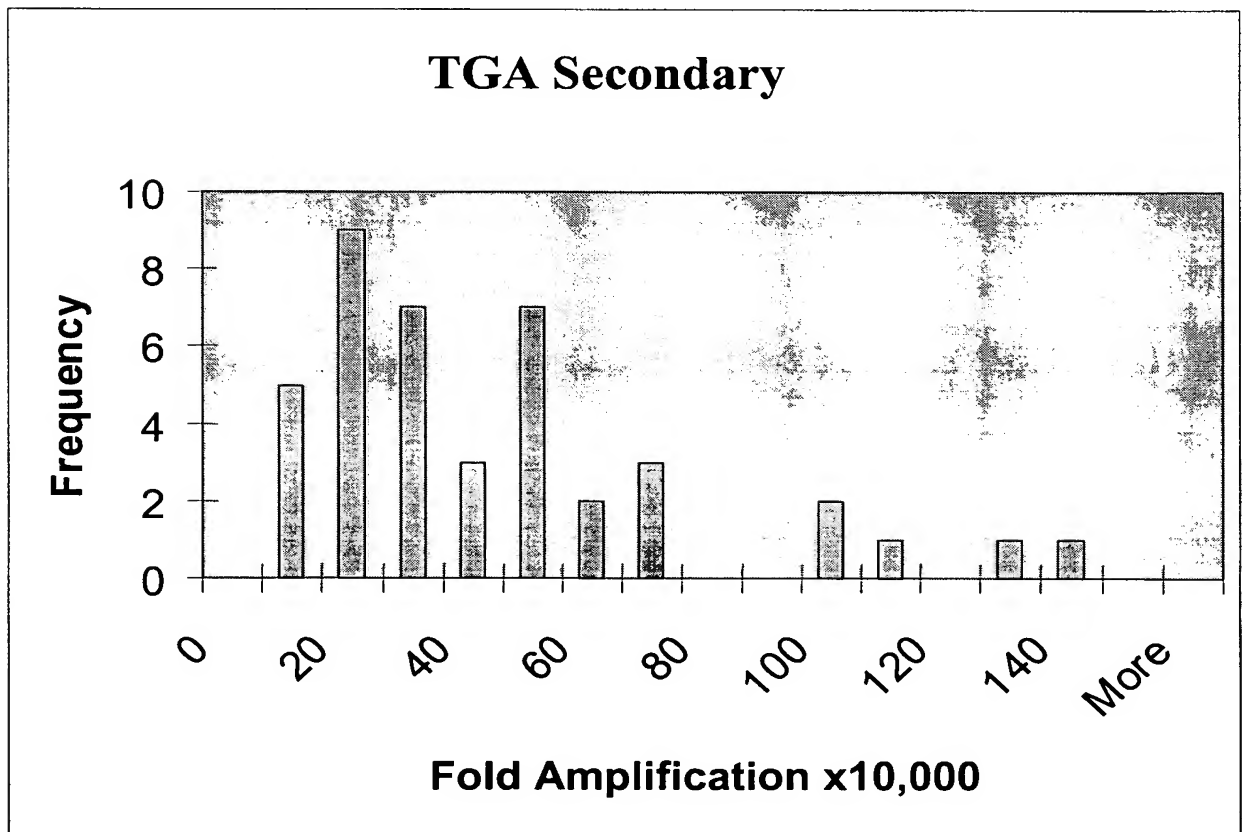
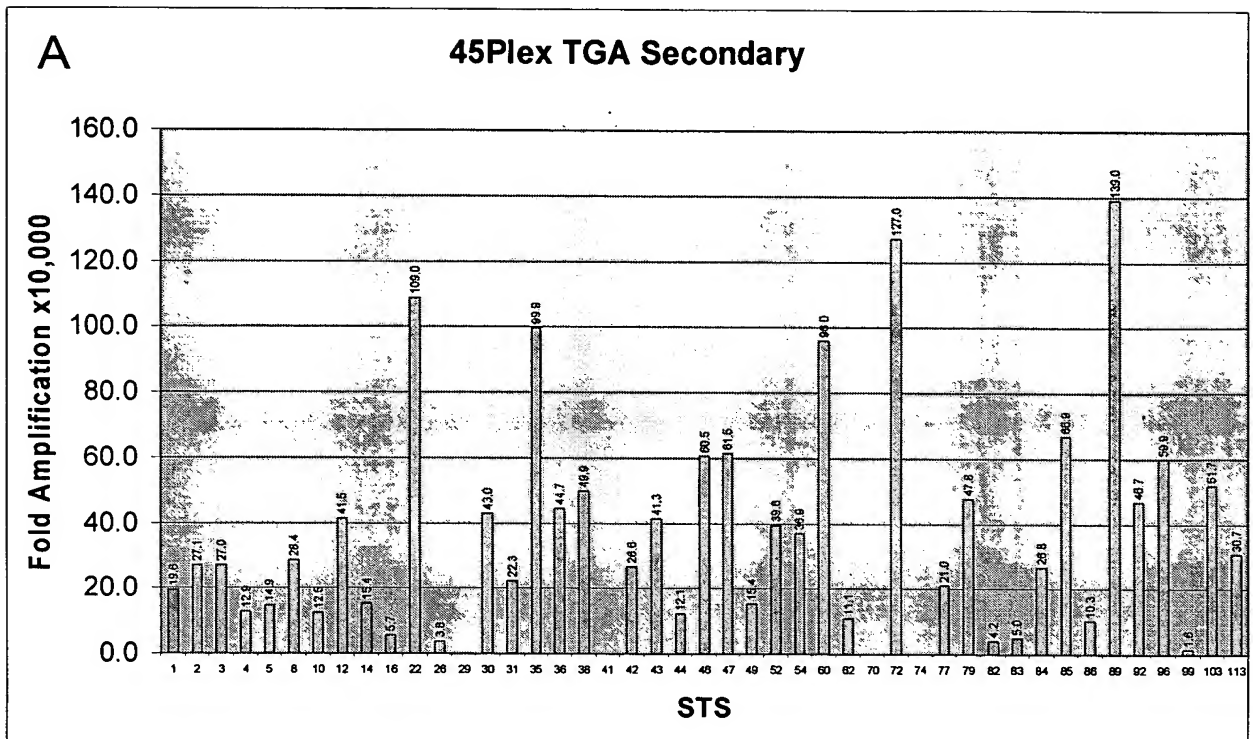


FIG. 40



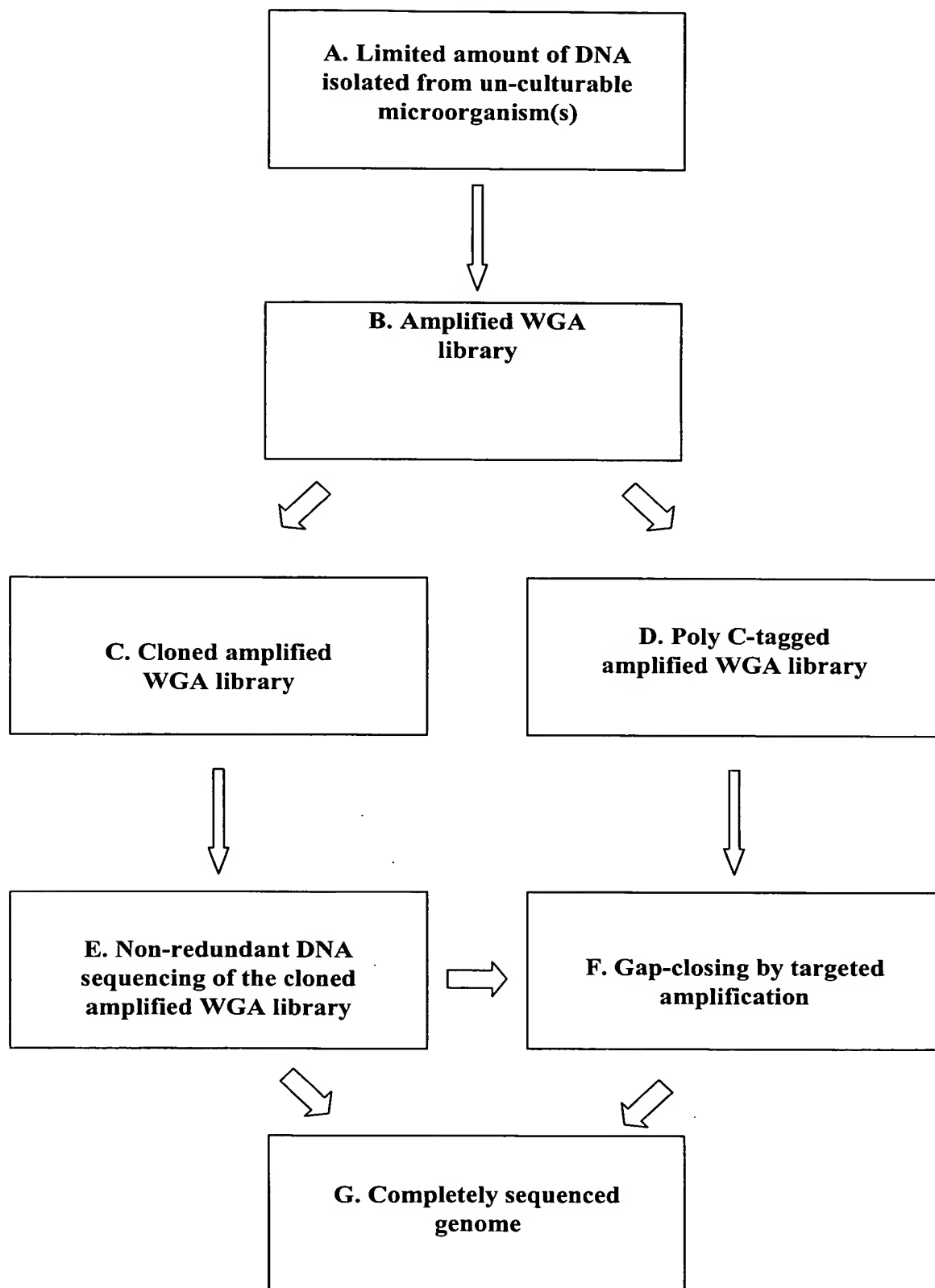


FIG. 41

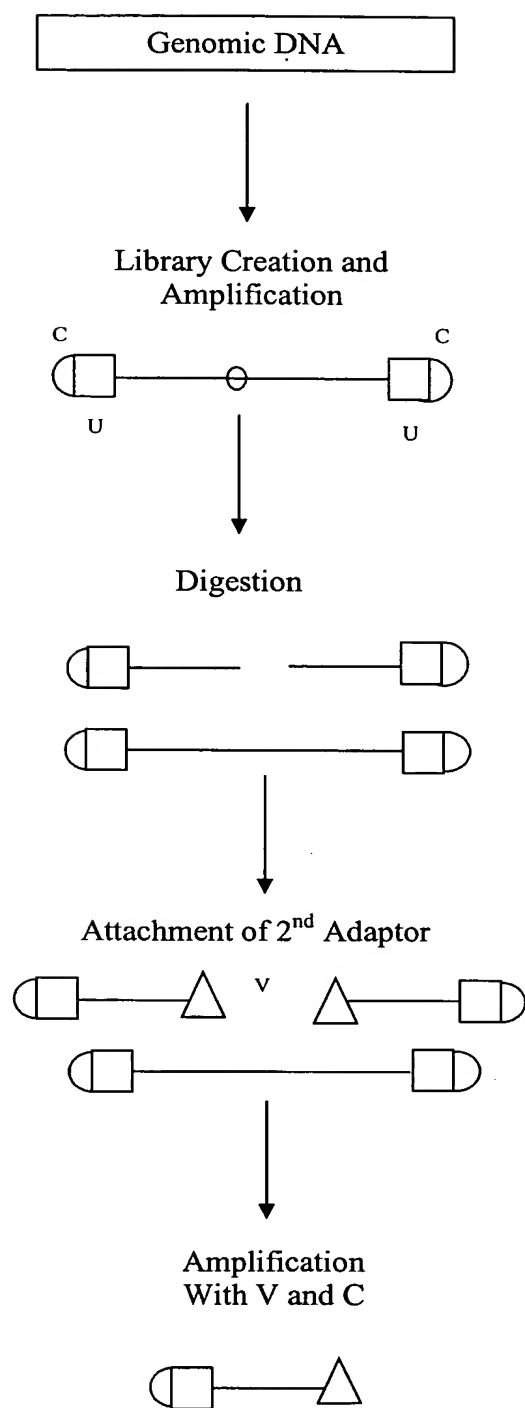


FIG. 42